

Brandon Fire District No. 1

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Source Protection Plan



**A guide to help protect the drinking water of the Town of
Brandon today for the needs of tomorrow**

Source Protection Plan

This Source Protection Plan shall be reviewed annually and updates submitted to the Drinking Water & Groundwater Protection Division every three years per compliance requirements.

<u>DATE</u>	<u>REVIEWER</u>	<u>UPDATE SENT</u>
05/13/2002	Raymond Counter	06/20/2002
02/01/2005	Raymond Counter	03/15/2005
08/12/2008	Raymond Counter	09/12/2008
01/28/2012	Raymond Counter	02/27/2012
02/18/2015	Raymond Counter	03/07/2015
03/08/2018	Raymond Counter	03/26/2018
03/22/2021	Raymond Counter	03/23/2021

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BRANDON FIRE DISTRICT NO. 1

Source Protection Plan

WSID #5211

INTRODUCTION

Water is a valuable natural resource and without proper management, its high quality and abundant quantity can be threatened. The Vermont Drinking Water & Groundwater Protection Division requires that each Public Community Water System (PCWS) have a Source Protection Plan (SPP), Contingency Plan and a Wellhead Protection Area (WHPA) delineated for each source. This Source Protection and Contingency Plan cover the active water supply sources of the Brandon Fire District No. 1 as of March 22, 2021. Brandon Fire District No. 1 is a Public Community Water System in the Town of Brandon, Vermont.

The purpose of the SPP is to protect the quality and quantity of water that is derived from these sources in the interest of the Brandon Fire District No. 1 and the water system users. The Brandon Fire District No. 1 provides drinking water to approximately 3,865 residents as well as water for fire protection to the Town of Brandon and surrounding smaller towns. Water is received from groundwater wells in Forest Dale, Vermont.

Groundwater is primarily stored in aquifers that contain enough water to yield usable amounts to wells and springs. Aquifers are recharged by precipitation seeping into the ground or by surface waters with which they are interconnected. In many parts of the country, recharge areas are close to the surface and may be significantly affected by agricultural, residential or industrial activities. The depth of ground water below the surface, the depth and type of soils above the aquifer, and many other factors affect the potential for contamination.

Experience in other towns and states have shown that source protection can decrease the risks of contamination or complete loss of the source. This experience has also shown that the cost to implement protective measures is far less than the cost to treat or replace contaminated water supplies.

Once contaminated, groundwater is difficult and sometimes impossible to clean. Because groundwater moves slowly, contaminants do not spread or mix quickly. Contaminants remain concentrated and are typically present for many years. If groundwater becomes contaminated, the contamination may eventually appear in surface water.

The intent of the Source Protection Plan is to provide information regarding our sources, the potential for the sources to be contaminated and the identification and management techniques that will be used to protect our sources now and in the future. The water system superintendent prepared the plans from various resources that are listed in **Appendix D**.

DEFINITIONS

The following definitions to terms are provided below.

Aquifer: Underground body of saturated earth materials sufficiently permeable to yield useful amounts of ground water to springs and wells.

Contaminant: Any physical, chemical, biological, or radiological substance or matter in water.

Contingency Plan: A plan for the location and provision of alternative drinking water supplies for a public water system in the event of source contamination or disruption of service.

Groundwater: Water below the land surface in a zone of saturation.

Hazardous Material: Any material, or combination of materials, determined to have a harmful effect on water quality, human life or other living organisms.

Overlay Zone: A separate district that is placed over an existing district, adding a new layer of regulations to those already in the underlying zone.

Potential Source of Contamination (PSOC): Any activity or condition, which may adversely affect water quality.

Recharge Area: The land surface from which precipitation recharges a spring or well. The Recharge Area is generally the same as the Wellhead Protection Area.

Source Protection Plan: A plan developed by a public water supplier detailing the steps taken both to protect the water quality of the source(s) serving the water system.

Water Table: The upper surface of the ground water below which the ground is saturated.

Wellhead Protection Area (WHPA): The surface and sub-surface area surrounding a spring or water well supplying a public water system through which contaminants are likely to move toward and reach water supplies. The WHPA is also referred to as the recharge area, and in Vermont law as a “public water source protection area”.

SOURCE PROTECTION AREA DELINEATION

The aquifer is comprised of glacial outwash sediments, consisting of horizontally bedded glaciofluvial gravel and ice contact gravels. The Drinking Water & Groundwater Protection Division in the 1980's delineated an Aquifer Protection Area (APA). The extent of water bearing materials from published and non-published maps, field reconnaissance and geology were methods used by the hydrogeologist to delineate the Source Protection Area.

The Fire District's Berry (#3) Well delineation was completed by Sprague GeoServices using the following analysis: A distance drawdown analysis, the Fixed Radius Method, the Uniform Flow Equation and the two-year time of travel distance. A copy of the Source Evaluation Report is available at the Fire District Office.

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An investigation to determine if there was a hydraulic connection between the Neshobe River and pumping of the Fire District wells was completed by EPA New England, Vermont Geologic Survey and the Fire District in 2007. Further work was completed by the Town of Brandon and the Fire District using a municipal grant in 2008. EPA, VGS, Norwich University and the Fire District worked to determine if the area near Woods Pond on McConnell Road in Brandon is suitable for a public water supply. (See **Appendix G**). Additionally, in 2011 the Fire District successfully petitioned the State of Vermont to have its groundwater sources and protection area reclassified to Class II groundwater, (See **Appendix F**).

The Brandon Fire District No.1 wells and its identification of Zones 1, 2 and 3 are shown on **Figures #2 & #3**. For understanding and identification purposes, the zones are defined as below.

Zone 1: The 200-foot isolation zone around the source where contaminant impacts are likely to be immediate and certain.

Zone 2: The area around the source where probable impacts from potential sources of contamination will occur. Zones 1 and 2 are considered to be the primary recharge area of the source.

Zone 3: The remaining area that may contribute to the recharge area.

SOURCES

The Brandon Fire District No 1 water system is served by the following sources (**Table 1**).

TABLE 1 – WATER SUPPLY SOURCES

NAME OR NUMBER	TYPE	DATE DRILLED OR PUT IN SERVICE	WELL DEPTH (ft)	CASING LENGTH (ft)	AIRLIFT YIELD (gpm)	APPROVED SAFE YIELD (gpm)
Well 1	Gravel Well	1952	59	52		450 gpm
Well 2	Gravel Well	1978	104	85		942 gpm
Well 3	Gravel Well	1997	108	82		1041gpm

Well 1 – Baker Well

Latitude - 043° 49' 42.8848" N Longitude - 073° 03' 28.8218" W

Well #1 is located at 110 Newton Road (tax map 16-20-05) in Forest Dale. Well #1 was constructed and developed between 1952 and 1953 in an unconfined sand and gravel aquifer and has the capability to produce approximately 450 gallons per minute (gpm).

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Well 2 – Mohan Well

Latitude - 043° 50' 01.5337" N Longitude - 073° 04' 10.5436" W

Well #2 is located at 67 Blackberry Lane (tax map 3-1-36) in Forest Dale. Well #2 was constructed and developed in 1971. This well is located in a confined sand and gravel aquifer and has the capability to produce between 700 and 942 gallons per minute.

Well 3 – Berry Well

Latitude - 043° 49' 53.8" N Longitude - 073° 04' 22.7" W

Well #3 is located at 71 Blackberry Lane (tax map 3-1-38), approximately 387 feet northeast of Well #2. This well is located in the same confined sand and gravel aquifer as Well #2 and was pump tested at a rate in excess of 1,000 gpm. Well #3 received a source permit to operate (PID # E-0167, WSID 5211) in a letter dated August 15, 2001.

PRIVATE WELLS LOCATED IN AQUIFER

The following is a list of wells located in the aquifer (See **Figure #4**), which are not owned or controlled by the Brandon Fire District No.1:

- 253 Deer Run Road – Brandon Fire District No 2 – Public Community Water System located in Planned Residential Development – **WSID # 5417**
The Public Service Board governs this system which is located in Zone 2 of the Mohan (#2) and Berry (#3) Wells.
- 31 Mountain Meadow – William Brooks – Private well located in Zone 3 of the Mohan (#2) and Berry (#3) Wells.
- 70 Mountain Meadow – Scott Rowden - Private well located in Zone 3 of the Mohan (#2) and Berry (#3) Wells.
- 122 Mountain Meadow – Mark Quenneville - Private well located in Zone 3 of the Mohan (#2) and Berry (#3) Wells.
- 1063 North Street – Alicia Taylor & Ryan Breen - Private well located in Zone 3 of the Mohan (#2) and Berry (#3) Wells.
- 477 Newton Road – Oscar Gardner - Private well located in Zone 2 of the Baker (#1), Mohan (#2) and Berry (#3) Wells.
- 125 Kennedy Road – Charles & Beth Davis – Private well located in Zone #3 of Griffin Well (#1)
- 2805 Forest Dale Road – Gary Forrest – Private well located in Zone #3 of Baker Well (#1).

SURFACE WATERS LOCATED IN AQUIFER

The following is a list of surface waters (See **Figure #3**) located in the aquifer excluding intermittent streams that flow throughout the year.

Neshobe River: The Neshobe River, a tributary of Otter Creek, flows from headwaters in the neighboring town of Goshen and enters the Source Protection Area in Zone 3 near Forest Dale Road. The Neshobe River is the northern boundary of the SPA for the Baker Well (#1) and is in Zone 2 of the Mohan (#2) and Berry (#3) Wells.

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Spring Pond: Spring Pond is located in Zone 2 east of the Fire District’s Mohan (#2) and Berry (#3) well sites. This pond has formed from groundwater discharge to the surface. Groundwater discharging at Spring Pond flows as surface water and forms a tributary of the Neshobe River.

Burnell Pond: Burnell Pond is located in Zone 3 of the Mohan (#2) and Berry (#3) well sites on Town Farm Road. This pond also forms a tributary of the Neshobe River.

Note: The Brandon Fire District No.1 wells were determined to not be under the direct influence of surface water as exempted by application.

LAND USES AND POTENTIAL SOURCES OF CONTAMINATION

Potential sources of contamination and potential threatening activities were obtained by reviewing Drinking Water & Groundwater Protection Division files, zoning files, Brandon Fire District files, local citizens’ knowledge and a walking survey of the Source Protection Area. An inventory of former and existing land uses, potential land uses and potential threatening activities are listed in **Table 2** below. All PSOC’s are assigned a unique identification number, whether it occurs in Zone 1,2 or3 of Well No.1, 2 or 3 and given a risk assessment of high, medium or low. Risk assessment was determined by several factors such as type of activity, distance from well and management of PSOC’s. An asterisk (*) indicates a former PSOC.

TABLE 2 – INVENTORY OF PSOC’s

Land Uses/PSOC’s Activities	Unique Contam ID#	Local/PSOC’s Occur in Zones 1, 2 and 3									Risk Assessment Of Land Uses/PSOC’s		
		Zone 1			Zone 2			Zone3			High	Med	Low
		1	2	3	1	2	3	1	2	3			
Agriculture	0001				X							x	
Residential – septic/leach field	0001a*				X								x
Residential – AST	0001b				X								x
Agriculture – AST	0001c				X								x
Agriculture – manure storage	0001d*				X								x
Commercial – manufacturing	0002				X	x	x					x	
Commercial – UST	0003*				X	x	x						x
Commercial – AST	0003a				X	x	x						x
Residential – septic/leach field	0004				X	x	x						x
Residential – AST	0004a				X	x	x						x
Residential – septic/leach field	0005				X	x	x						x
Residential – AST	0005a				X	x	x						x
Residential – pool	0005b*				X	x	x						x
Residential – septic/leach field	0006				X								x
Residential – AST	0006a				X								x
Public – UST	0007				X							x	
Commercial – manufacturing	0008*				X							x	

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**TABLE 2 – INVENTORY OF PSOC’s
(Continued)**

Land Uses/PSOC’s Activities	Unique Contam. ID#	Local/PSOC’s Occur in Zones 1, 2 and 3									Risk Evaluation Of Land Uses/PSOC’s			
		Zone 1			Zone 2			Zone3			High	Med	Low	
		1	2	3	1	2	3	1	2	3				
Residential – septic/leach field	0027					x	x							x
Residential – AST	0027a					x	x							x
Residential – septic/leach field	0028					x	x							x
Residential – AST	0028a					x	x							x
Residential – septic/leach field	0029					x	x							x
Residential – AST	0029a					x	x							x
Residential – septic/leach field	0030					x	x							x
Residential – AST	0030a					x	x							x
Residential – septic/leach field	0031					x	x							x
Residential – AST	0031a					x	x							x
Residential – septic/leach field	0032					x	x							x
Residential – AST	0032a					x	x							x
Residential – septic/leach field	0033*					x	x							x
Residential – AST	0033a*					x	x							x
Residential – septic/leach field	0034					x	x							x
Residential – AST	0034a					x	x							x
Residential – septic/leach field	0035					x	x							x
Residential – AST	0035a					x	x							x
Residential – septic/leach field	0036					x	x							x
Residential – AST	0036a					X	x							x
Residential – septic/leach field	0037					X	x							x
Residential – AST	0037a					X	x							x
Residential – septic/leach field	0038					X	x							x
Residential – AST	0038a					X	x							x
Residential – septic/leach field	0039					X	x							x
Residential – AST	0039a					X	x							x
Residential – septic/leach field	0040					X	x							x
Residential – AST	0040a					X	x							x
Commercial –former sawmill	0041*					X	x							x
Commercial – septic	0042					X	x							x
Commercial – former service	0042a*					X	x							x
Commercial – AST	0042b					X	x							x
Residential – septic/leach field	0042c					X	x							x
Residential – AST	0042d					X	x							x
Residential – septic/leach field	0042e					X	x							x
Residential – AST	0042f					X	x							x

DESCRIPTION OF PSOC'S

Below is a list of all PSOC's by unique identification number, land use, tax map number, E911 address (if applicable) a brief description of the PSOC and the owner/responsible person.

- **0001** - Agriculture – 16-20-4.06 – 2248 Forest Dale Road
Potential contamination from application of pesticides/herbicides to cornfield.
Owner/Responsible Person – Rodney Bicknell & Karla Berger
- ~~**0001a** Residential – 16-20-4.06 – 2248 Forest Dale Road¹~~
- **0001b**- Residential – 16-20-4.06 – 2248 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Rodney Bicknell & Karla Berger
- **0001c**- Agriculture – 16-20-4.06 – 2248 Forest Dale Road
Potential contamination from aboveground storage tanks that contain fuel oil for farming purposes.
Owner/Responsible Person – Rodney Bicknell & Karla Berger
- ~~**0001d** Agriculture – 16-20-4.06 – 2248 Forest Dale Road²~~
- **0002** – Commercial – 16-20-40 – 107 Newton Road³
Storage and use of volatile organic compounds (VOC's) such as acetone, paints, lacquers, thinners and finishes for furniture manufacturing.
Owner/Responsible Person – Forest Dale Holding Partnership
- ~~**0003*** Commercial – 16-20-9 – 15 Furnace Road⁴~~
- **0003a**- Commercial – 16-20-9 – 15 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – David Carroll
- **0004** – Residential – 16-20-22 – 2508 Forest Dale Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.

¹ PSOC #0001a - septic tank removed and 2248 Forest Dale Road residence hooked up to municipal sewer system in 2008.

² PSOC #0001d – farm discontinued farm operations in 2018

³ *Hazardous Waste Generator – WMD File No. 11-29-004*

⁴ PSOC #0003 – underground tank removed in 2017

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Owner/Responsible Person – Holly Brilyea

- **0004a**- Residential – 16-20-22 – 2508 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Holly Brilyea
- **0005** – Residential – 16-20-23 – 2488 Forest Dale Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Brent & Tammy Scarborough
- **0005a**- Residential – 16-20-23 – 2488 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Brent & Tammy Scarborough
- ~~**0005b** – Residential – 16-20-23 – 2488 Forest Dale Road⁵~~
- **0006** – Residential – 16-20-26 – 2332 Forest Dale Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Juan Ramos
- **0006a**- Residential – 16-20-26 – 2332 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Juan Ramos
- **0007** – Public – 16-20-51 – Neshobe Circle⁶
Potential contamination from underground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Neshobe School
- ~~**0008** – Commercial – 16-20-55 – 2014 Forest Dale Road⁷~~
- **0009** – Residential – 16-20-56 – 1964 Forest Dale Road
Potential contamination from use and storage of chemicals in association with underground swimming pool.
Owner/Responsible Person – Michael Bryant
- **0010** – Residential – 16-20-57 – 1946 Forest Dale Road

⁵ PSOC #0005b - Swimming pool removed in 2008

⁶ *Underground Storage Tank – WMD Facility ID No. 1421*

⁷ *Hazardous Waste Generator – WMD File No. 11-29-003 – former storage and use of chemicals associated with plastics manufacturing.*

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Septic effluent and disposal of household hazardous wastes into septic tank and leach field.

Owner/Responsible Person – Michael Markowski

- ~~0010a~~ Residential – ~~16-20-57~~ – ~~1946 Forest Dale Road~~⁸
- ~~0238~~ Residential – ~~16-20-58~~ – ~~1920 Forest Dale Road~~⁹
- **0238a** - Residential – 16-20-58 – 1920 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Justin Edson
- **0011** – Commercial – 16-20-59 - Forest Dale Road
Cemetery
Owner/Responsible Person – Forest Dale Cemetery Association
- ~~0012~~ Residential – ~~16-20-2~~ – ~~449 Newton Road~~¹⁰
- ~~0012a~~ Residential – ~~16-20-2~~ – ~~449 Newton Road~~¹¹
- **0013** – Residential – 16-20-1- 477 Newton Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Oscar Gardner
- **0013a**- Residential – 16-20-1- 477 Newton Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Oscar Gardner
- **0014** – Residential – 15-21-1.01 – 419 Newton Road¹²
- **0014a**- Residential – 15-21-1.01 – 419 Newton Road¹³
- **0015** – Residential – 15-21-1.03 – 17 Burke Park
Septic effluent and disposal of household hazardous wastes into pump station and associated lines.
Owner/Responsible Person – Norman Legault

⁸ PSOC #0010a – underground swimming pool removed in 2018

⁹ PSOC #0238 - septic tank removed and residence hooked up to municipal sewer system in 2011.

¹⁰ PSOC #0012 – septic tank removed and residence demolished in 2018

¹¹ PSOC #0012a – oil tank removed in 2018

¹² PSOC #0014 – septic tank removed and residence demolished in 2018.

¹³ PSOC #0014a – oil tank removed in 2018.

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- **0015a-** Residential – 15-21-1.03 – 17 Burke Park
Hazardous Waste Site – WMD Site No. 941651
Owner/Responsible Person – Norman Legault
- **0015b-** Residential – 15-21-1.03 – 17 Burke Park
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Norman Legault
- ~~**0015c** Residential – 15-21-1.02 – 29 Burke Park¹⁴~~
- **0016** – Residential – 15-21-19 - 16 Burke Park
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Tim Kerr
- **0017** – Municipal – 15-21-21 – 397 Newton Road
Potential contaminations from overflow of municipal sewer pump station.
Owner/Responsible Person – Town of Brandon
- **0018** – Residential – 15-21-2 – 177 Chapel Hill Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – John & Abby Brodowski
- **0018a-** Residential – 15-21-2 – 177 Chapel Hill Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – John & Abby Brodowski
- **0019** – Residential – 15-21-3 – 175 Chapel Hill Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Michael Many
- **0019a-** Residential – 15-21-3 – 175 Chapel Hill Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Michael Many
- **0020** – Residential – 15-21-4 – 144 Chapel Hill Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Louise McKeighan

¹⁴ PSOC #0015c - Mobile home and fuel tank removed in 2006.

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- **0020a-** Residential – 15-21-4 – 144 Chapel Hill Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Louise McKeighan
- **0021** – Residential – 15-21-12 – 273 Chapel Hill Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Jacob & Serena Maxwell
- ~~**0021a** Residential – 15-21-12 – 273 Chapel Hill Road¹⁵~~
- **0021b-** Residential – 15-21-12 – 273 Chapel Hill Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Jacob & Serena Maxwell
- **0022** – Residential – 15-20-2.02 – 70 Mountain Meadow Drive
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Scott Rowden
- **0022a-** Residential – 15-20-2.02 – 70 Mountain Meadow Drive
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Scott Rowden
- **0023** – Residential – 15-20-2.03 – 122 Mountain Meadow Drive
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Mark Quenneville
- **0023a-** Residential – 15-20-2.03 – 122 Mountain Meadow Drive
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Mark Quenneville
- **0024** – Residential – 15-20-2.01 – 31 Mountain Meadow Drive
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – William Brooks
- **0024a-** Residential – 15-20-2.01 – 31 Mountain Meadow Drive

¹⁵ PSOC #0021a - Swimming pool removed in 2009.

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Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.

Owner/Responsible Person – William Brooks

- **0025** – Residential – 15-20-4 - 1063 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Alicia Taylor & Ryan Breen
- **0025a**- Residential – 15-20-4 - 1063 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Alicia Taylor & Ryan Breen
- **0026** – Residential – 15-20-5 – 993 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Steven & Nancy Bird
- **0026a**– Residential – 15-20-5 – 993 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Steven & Nancy Bird
- ~~**0026b** Residential – 15-20-5 – 993 North Street~~
- **0027** – Residential – 15-20-6.02 – 949 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Larry Mohan
- **0027a**- Residential – 15-20-6.02 – 949 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Larry Mohan
- **0028** – Residential – 15-20-6.04 – 921 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Shawn & Amy Lear
- **0028a**- Residential – 15-20-6.04 – 921 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Shawn & Amy Lear

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- **0029** – Residential – 15-20-6.03 – 923 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Chris Bird
- **0029a**- Residential – 15-20-6.03 – 923 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Chris Bird
- **0030** - Residential – 15-20-7.01 – 926 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Fred Oberkirch
- **0030a**- Residential – 15-20-7.01 – 926 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Fred Oberkirch
- **0031** - Residential – 15-20-7.02 – 946 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Fred Oberkirch
- **0031a**- Residential – 15-20-7.02 – 946 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Fred Oberkirch
- **0032** - Residential – 15-20-8 – 982 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – David Aines
- **0032a**- Residential – 15-20-8 – 982 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – David Aines
- ~~**0033** – Residential – 15-20-9 – 986 North Street¹⁶~~
- ~~**0033a** – Residential – 15-20-9 – 986 North Street¹⁷~~

¹⁶ PSOC #0033 & 0033a - Septic tank removed in 2008.

¹⁷ PSOC #0033a – Fuel tank removed in 2008

Source Protection Plan

- **0034** - Residential – 15-20-10 – 1028 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Rachel Chartrand
- **0034a**- Residential – 15-20-10 – 1028 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Rachel Chartrand
- **0035** - Residential – 15-20-31 – 788 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Allen & Patricia Ayer
- **0035a**- Residential – 15-20-31 – 788 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Allen & Patricia Ayer
- **0036** - Residential – 15-20-32 – 818 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Gwendolyn Merrill
- **0036a**- Residential – 15-20-32 – 818 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Gwendolyn Merrill
- **0037** - Residential – 15-20-33 – 838 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Aimee Herrick
- **0037a**- Residential – 15-20-33 – 838 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Aimee Herrick
- **0038** - Residential – 15-20-34 – 860 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Harold Russell

Source Protection Plan

- **0038a**- Residential – 15-20-34 – 860 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Harold Russell
- **0039** - Residential – 15-20-35 – 884 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Eric Mallory
- **0039a**- Residential – 15-20-35 – 884 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Eric Mallory
- **0040** - Residential – 15-20-36.1 – 890 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Grace Bird
- **0040a**- Residential – 15-20-36.01 – 890 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Grace Bird
- ~~**0041** – Commercial – 15-20-36.02 – 911 North Street¹⁸~~
- **0042** - Commercial – 15-20-39 – 855 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – James Sauder
- ~~**0042a** – Commercial – 15-20-39 – 855 North Street¹⁹~~
- **0042b**- Commercial – 15-20-39 – 855 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – James Sauder
- ~~**0042c** – Residential – 15-20-39 – 21 Robin Bird Lane²⁰~~

¹⁸ PSOC #0041 – former sawmill operation

¹⁹ PSOC #0042a – former boat sales and service

²⁰ PSOC #0042c – former septic tank removed in 2005

Source Protection Plan

- ~~0042d~~ Residential – ~~15-20-39 – 21 Robin Bird Lane~~²¹
- **0042e**- Residential – 15-20-39 – 42 Robin Bird Lane
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – James Sauder
- **0042f**-Residential – 15-20-39 – 42 Robin Bird Lane
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – James Sauder
- **0043** - Residential – 15-20-40 – 89 Robin Bird Lane
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Robert Kalinowski
- **0043a**- Residential – 15-20-40 – 89 Robin Bird Lane
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Robert Kalinowski
- **0044** - Residential – 15-20-42 – 835 North Street
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Adam & Kristen Harrison
- **0044a**- Residential – 15-20-42 – 835 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Adam & Kristen Harrison
- **0045** – Agriculture – 15-20-43 & 15-20-45.01 – 729 North Street
Potential contamination from application of pesticides/herbicides to cornfield.
Owner/Responsible Person – Wayne Kingsley
- **0046** - Residential – 15-20-44 – 729 North Street²²
- **0046a**- Residential – 15-20-45.02 – 729 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Wayne Kingsley

²¹ PSOC #0042d – former aboveground storage tank removed in 2005.

²² PSOC #0046 – residence connected to municipal sewer system in 1991.

Source Protection Plan

- **0047** - Residential – 15-20-45.03 – 677 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Brent Perkins
- **0048** - Residential – 15-20-44 – 651 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Oliver Huntley
- **0048a**-Residential – 15-20-44 – 651 North Street
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Oliver Huntley
- **0049** - Residential – 15-20-46 – 623 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Martha Wright
- **0050** - Residential – 15-20-47 – 609 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Ellen Hayes
- **0051** - Residential – 15-20-48 – 595 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Donna Balthazar
- **0052** – Residential – 15-20-49 – 14 Conway Terrace
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Community Ventures, LLC
- **0052a**– Residential – 15-20-49 – 30 Conway Terrace
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Community Ventures, LLC
- **0052b**– Residential – 15-20-49 – 48 Conway Terrace
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Community Ventures, LLC
- **0052c**– Residential – 15-20-49 – 66 Conway Terrace

Source Protection Plan

Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.

Owner/Responsible Person – Community Venture LLC

- **0052d**– Residential – 15-20-49 – 84 Conway Terrace
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Community Ventures, LLC
- **0052e**– Residential – 15-20-49 – 94 Conway Terrace
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Community Ventures, LLC
- **0052f**– Residential – 15-20-49 – 81 Conway Terrace
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Community Ventures, LLC
- **0052g**– Residential – 15-20-49 – 61 Conway Terrace
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Community Ventures, LLC
- **0052h**– Residential – 15-20-49 – 43 Conway Terrace
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Community Ventures, LLC
- **0052i**– Residential – 15-20-49 – 31 Conway Terrace
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Community Ventures, LLC
- **0052j**– Residential – 15-20-49 – 21 Conway Terrace
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Community Ventures, LLC
- **0052k**– Residential – 15-20-49 – 9 Conway Terrace
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Community Ventures, LLC

Source Protection Plan

- ~~0053~~ Commercial – 15-20-52 – 481 North Street²³
- ~~0053a~~ Commercial – 15-20-52 – 481 North Street²⁴
- **0053b** - Commercial – 15-20-52 – 481 North Street²⁵
Storage and use of volatile organic compounds (VOC's) such as acetone, paints, lacquers, thinners and finishes for furniture manufacturing.
Owner/Responsible Person – New England Woodcraft (Charles Thurston)
- **0054** - Residential – 8-1-16 - 125 Kennedy Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Charles & Beth Davis
- **0054a**- Residential – 8-1-16 - 125 Kennedy Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Charles & Beth Davis
- **0055** – Commercial – 8-1-25 – Frasier Road²⁶
- **0056** - Residential – 4-1-12 – 103 Wagner Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Galen Hutchinson
- **0056a**- Residential – 4-1-12 – 103 Wagner Road
Potential contamination from forest harvesting.
Owner/Responsible Person – Galen Hutchinson
- **0057** - Residential – 4-1-15 - 2805 Forest Dale Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Gary Forrest
- **0057a**- Residential – 4-1-15 - 2805 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Gary Forrest

²³ PSOC #0053 – former laundromat

²⁴ PSOC #0053a – former snowmobile sales and service

²⁵ Hazard Waste Generator – WMD File No. 11-12-005

²⁶ PSOC #0055 – former sawmill and logging operation

Source Protection Plan

- ~~0058-0058b~~ Commercial – 4-1-16 – 2660 Forest Dale Road²⁷
- **0059** – Commercial – 4-1-18
Former ironworks blast furnace
Owner/Responsible Person – Vt Historic Preservation
- **0060** - Residential – 4-1-19 – 123 Prescott Lane
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Linda Prescott
- **0060a**- Residential – 4-1-19 – 123 Prescott Lane
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Linda Prescott
- **0060b**- Residential – 4-1-19 – 182 Prescott Lane
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Linda Prescott
- **0060c**- Residential – 4-1-19 – 182 Prescott Lane
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Linda Prescott
- **0060d**- Residential – 4-1-19 – 55 Prescott Lane
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Linda Prescott
- ~~0060e~~ Commercial – 4-1-19 – 141 Prescott Lane²⁸
- **0061** - Residential – 8-1-70 – 97 Ray Forrest Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – David & Karin Butterfield
- **0061a**- Residential – 8-1-70 – 97 Ray Forrest Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – David & Karin Butterfield

²⁷ PSOC #0058-0058b - Former VTAOT garage – former underground storage of fuels, road salt, septic. Hazardous Waste Generator – WMD File No. 11-02-001

²⁸ PSOC #0060e – former tower construction company

Source Protection Plan

- ~~0062 & 0062a~~ - Residential – 16-21-1 – 59 Ray Forrest Road²⁹
- **0063** - Residential – 16-21-2 – 45 Ray Forrest Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Sylvia Hope
- **0063a**- Residential – 16-21-2 – 45 Ray Forrest Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Sylvia Hope
- **0064** - Residential – 16-21-3 – 33 Ray Forrest Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Lawrence Bresette
- **0064a**- Residential – 16-21-3 – 33 Ray Forrest Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Lawrence Bresette
- **0064b**- Residential – 16-21-3 – 33 Ray Forrest Road
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Lawrence Bresette
- **0065** - Residential – 16-21-4 – 2579 Forest Dale Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Todd Thornton
- **0065a**- Residential – 16-21-4 – 2579 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Todd Thornton
- **0066** - Residential – 16-21-5 – 8 Kennedy Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Donald & Crescent Remaniak
- **0066a**- Residential – 16-21-5 – 8 Kennedy Road

²⁹ PSOC #0062 & 0062a - Mobile home, septic and fuel tank removed in 2009.

Source Protection Plan

Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.

Owner/Responsible Person – Donald & Crescent Remaniak

- **0067** - Residential – 16-21-6 – 126 Kennedy Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Shirley Wheeler
- **0067a**- Residential – 16-21-6 – 126 Kennedy Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Shirley Wheeler
- **0068** – Residential – 16-21-8 - 41 Kennedy Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Jon & Peggy Rishel
- **0069** – Residential – 16-21-9 – 2443 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – June Doaner
- **0069a**- Residential – 16-21-9 – 2443 Forest Dale Road
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – June Doaner
- **0070** - Residential – 16-21-10 – 2411 Forest Dale Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Gregory Sharon
- **0070a**- Residential – 16-21-10 – 2411 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Gregory Sharon
- **0071** - Residential – 16-21-11 – 2365 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Gregory Sharon
- **0072** - Residential – 16-21-12 – 2321 Forest Dale Road
Septic effluent and disposal of household hazardous wastes into septic

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tank and leach field.

Owner/Responsible Person – John Hoare

- **0072a**- Residential – 16-21-12 – 2321 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – John Hoare
- **0073** - Residential – 16-21-13 – 2295 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Clifford Audet
- ~~**0074** - Commercial – 16-21-14 – 2265 Forest Dale Road³⁰~~
- **0075**- Residential – 16-21-15 – 2251 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Real & Jeanine Bergeron
- **0076** – Forest – 16-21-16 – Forest Dale Road
Potential contamination from forest harvesting.
Owner/Responsible Person – Daniel Doaner
- ~~**0077 & 0077a** - Residential – 16-21-17 – 2219 Forest Dale Road³¹~~
- **0078** - Residential – 16-21-18 – 2187 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – David Fowler
- **0079**- Residential – 16-21-19 – 2171 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – David & Gayle Dushaney
- **0080** - Residential – 16-21-20 – 2151 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Chad & Susan Disorda
- **0081** - Residential – 16-21-23 – 2135 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2

³⁰ PSOC #0074 – Gasoline tank and pumps removed in 1981.

³¹ PSOC #0077 & 0077a - Mobile home, septic and fuel tank removed in 2007.

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fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Bonnie Nucera

- **0082** - Residential – 16-21-26 – 2083 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – John & Michelle Capen
- **0083** – Residential – 16-21-28 – 1949 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Sean Fierman
- ~~**0084-0087** – Residential – (16-21-30 – 16-21-33)~~³²
- **0088** - Residential – 16-20-54 – 2104 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Richard & Amy Rogers
- **0089** - Residential – 16-20-53 – 2116 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Philip Hardway
- **0090** - Residential – 16-20-50– 232 Neshobe Circle
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Rodney Bicknell
- **0091** - Residential – 15-20-50 – 529 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Gary & Lynda Merrill
- **0092** - Residential – 15-21-20 – 389 Newton Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Richard Rochon
- **0093** - Residential – 16-20-4 – 127 Middle Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.

³² PSOC #0084-0087 – Removed from Source Protection/Class 2 Groundwater Area upon approval of Drinking Water & Groundwater Protection Division in December 2011.

Source Protection Plan

Owner/Responsible Person – Michael McDonough

- **0094** – Public – 16-20-25.01 – 2454 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Larsen Lauritz
- **0095** - Residential – 16-20-25.02 – 2364 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Paul Wood
- **0096** - Residential – 16-20-27 – 2314 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Douglas Lazarus
- **0097** - Residential – 16-20-28 – 2298 Forest Dale Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Thomas O’Halloran
- **0098** – Residential – 16-20-29 – 21 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Carolyn Taylor
- **0099** - Residential – 16-20-30 – 35 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Paul & Regina Houle
- **0100** - Residential – 16-20-31 – 49 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Charles LaMoureux
- ~~**0100a** - Residential – 16-20-31 – 49 North Street³³~~
- **0101** - Residential – 16-20-32 – 69 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Dea Kimball

³³ PSOC # 0100a - Swimming pool removed in 2009.

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- **0102** - Residential – 16-20-33 – 87 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Robert Kerr
- **0103** - Residential – 16-20-34 – 101 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – William & Meagan Rose
- **0104** - Residential – 16-20-35 – 119 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – William Hodges
- **0105** - Residential – 16-20-36 – 133 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Stacey Edmunds
- **0106** - Residential – 16-20-37 149 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Kelly Disorda
- **0106a**- Residential – 16-20-37 149 North Street
Potential contamination from use and storage of chemicals in association with underground swimming pool.
Owner/Responsible Person – Kelly Disorda
- **0107** - Residential – 16-20-38 – 93 Middle Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Doug, Nicki & Erica Mohan
- **0108** - Residential – 16-20-39 – 21 Middle Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Joseph Renfrew
- **0109** - Residential – 16-20-41.01 – 176 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Jean Lamarre
- **0110** - Residential – 16-20-41.02 – 38 Newton Road

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Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Brandi Backus

- **0111** – Residential – 16-20-42 – 152 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Jean Pfenning
- **0112** - Residential – 16-20-43 – 142 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Barbara Whipple
- **0113** - Residential – 16-20-44 – 128 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Jordan & Catherine Bresette
- **0114** - Residential – 16-20-45 – 118 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Thomas & Deborah Lloyd
- **0115** - Residential – 16-20-46 – 104 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Evan & Karen Sherman
- **0116** - Residential – 16-20-47 – 90 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – NNEDC
- **0117** - Residential – 16-20-48 – 76 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – NNEDC
- **0118** - Residential – 16-20-49 – 60 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Jerilyn Langsdon
- **0119** – Residential – 16-20-12 - 46 Schoolhouse Road
Potential contamination from aboveground storage tank that contains #2

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fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Ryan Machia

- **0120** - Residential – 16-20-14 - 67 Schoolhouse Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Schoolhouse, LLC
- **0121** - Residential – 16-20-16 - 114 Middle Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Bradley Gearwar
- **0122** - Residential – 16-20-17 - 140 Middle Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Jennifer Keeler
- **0123** – Residential – 15-20-54 – 449 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – New England Woodcraft
- **0124** - Residential – 15-20-73 – 379 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Thomas & Jennifer Hobbs
- ~~**0124a** - Residential – 15-20-73 – 379 North Street~~³⁴
- **0125** - Residential – 15-20-71 – 349 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – David Mitchell
- **0126** - Residential – 15-20-70 – 317 North Street
Potential contamination from underground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Marcia Butler
- **0127** - Residential – 15-20-69 - 7 Bridge Park
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Gary Stone

³⁴ PSOC #0124a - Swimming pool removed in 2009.

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- **0127a-** Residential – 15-20-69 – 12 Bridge Park
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Edward & Tonya Wilford
- **0127b-** Residential – 15-20-69 – 18 Bridge Park
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Jeremy Young
- **0127c-** Residential – 15-20-69 – 19 Bridge Park
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Ashley Dunbar
- **0127d-** Residential – 15-20-69 – 20 Bridge Park
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Jeremy Munger
- **0128 -** Residential – 15-20-68 – 52 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – David & Laura Kenyon
- **0128a-** Residential – 15-20-68 – 76 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – David & Laura Kenyon
- **0128b-** Residential – 15-20-68 – 84 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – David & Laura Kenyon
- **0129 -** Residential – 15-20-67 – 100 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Howard & Shirley Bowen
- **0130 -** Residential – 15-20-65 – 132 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Dorothy Bird

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- **0130a**- Residential – 15-20-65 – 132 Furnace Road
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Dorothy Bird
- **0131** - Residential – 15-20-66 – 116 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Mark & Wendy Brouilliard
- **0132** - Residential – 15-20-64 – 162 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Bernard Quesnel
- **0133** - Residential – 15-20-63 – 180 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Katherine Chandler
- **0134** - Residential – 15-20-62 – 196 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Jeffrey & Denise Hayes
- **0135** - Residential – 15-20-61 – 212 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Thelma McKeighan-Sunderland
- **0136** - Residential – 15-20-60 – 228 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Timothy Williams
- **0136a** – Residential – 15-20-60 – 228 Furnace Road
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Timothy Williams
- **0137** - Residential – 15-20-59 – 240 Furnace Road
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Tim & Billie Ann Scott
- **0138** - Residential – 15-20-54 – 256 Furnace Road

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Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.

Owner/Responsible Person – Deneen LaMoureux

- **0139** - Residential – 15-20-55 – 291 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Serge Cotnoir
- ~~**0139a** - Residential – 15-20-55 – 291 Furnace Road³⁵~~
- **0140** - Residential – 15-20-56 – 253 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Ruth Luther
- **0141** - Residential – 15-20-57 – 241 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Rodney Luther
- **0141a**- Residential – 15-20-57 – 241 Furnace Road
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Rodney Luther
- **0142** - Residential – 15-20-58 – 225 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Michael Gerow
- ~~**0142a** - Residential – 15-20-58 – 225 Furnace Road³⁶~~
- **0143** - Residential – 16-20-21.01 – 203 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes.
Owner/Responsible Person – Lawrence Kopp
- **0144** – Residential – 16-20-20 – 183 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Kelly Atwood

³⁵ PSOC #0139a - Swimming pool removed in 2007.

³⁶ PSOC #0142a - Swimming pool removed in 2008.

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- ~~0144a Residential – 16-20-20 – 183 Furnace Road~~³⁷
- **0145** - Residential – 16-20-19 – 165 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Christine LaRock
- **0146** - Residential – 16-20-18 – 141 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Gabriel McGuigan
- **0147** - Residential – 16-20-15 – 89 Furnace Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Lucas & Beth Manchester
- ~~0148 Residential – 16-20-7 – 37 Newton Road~~³⁸
- ~~0148a Residential – 16-20-7 – 51 Newton Road~~³⁹
- **0149** - Residential – 15-20-30 – 748 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Jeffrey Renfrew
- ~~0150 Residential – 15-20-29 – 732 North Street~~⁴⁰
- ~~0150a Residential – 15-20-29 – 732 North Street~~⁴¹
- **0151** – Residential – 15-20-28 – 710 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – George Disorda
- **0152** – Residential – 15-20-27 – 690 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Mesa 690 Trust (Daniel Pitner)
- **0153** - Residential – 15-20-26 – 658 North Street

³⁷ PSOC # 0144a - Swimming pool removed in 2010.

³⁸ PSOC #0148 – Home demolished and tank removed in 2018.

³⁹ PSOC #0148a – Home demolished and tank removed in 2018.

⁴⁰ PSOC #0150 – Home demolished and tank removed in 2016.

⁴¹ PSOC #0150a - Swimming pool removed in 2007.

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Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Peter Bearor

- **0154** - Residential – 15-20-25 – 640 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Jerry McCray
- **0154a**- Residential – 15-20-25 – 640 North Street
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Jerry McCray
- **0155** - Residential – 15-20-24 – 620 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Darlene Putnam-Gero
- **0156** - Residential – 15-20-23 – 610 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Charles Holbrook
- **0157** - Residential – 15-20-81 - 590 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Mary Devino
- **0158** - Residential – 15-20-80 – 572 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Traven Francis
- **0159** - Residential – 15-20-79 – 544 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Corey & Krista Oldroyd
- **0160** - Residential – 15-20-78 – 518 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Frederick Pockette
- **0161** – Commercial – 15-20-82 – North Street
Potential contamination from forest harvesting.

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Owner/Responsible Person – New England Woodcraft

- **0162** - Residential – 15-20-76 – 492 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Jennifer Herrera-Condry
- **0163** - Residential – 15-20-75 – 448 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Lawrence Hutchins
- **0164** – Residential – 15-21-6 – 388 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Susan Fillioe
- **0165** – Residential – 15-21-5 – 346 North Street
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Perry Beede
- **0165a**-Commercial – 15-21-5 – 346 North Street
Former furniture manufacturing plant site
Owner/Responsible Person – Perry Beede
- **0166** – Commercial – 3-1-16 & 3-1-20 - Blackberry Lane
Potential contamination from sand and gravel extraction.
Owner/Responsible Person – RNH Gravel, LLC
- **0166a**- Commercial – 3-1-16 & 3-1-20 – Blackberry Lane
Potential contamination from forest harvesting.
Owner/Responsible Person – RNH Gravel, LLC
- ~~**0167** – Commercial – 3-1-19 – Blackberry Lane⁴²~~
- ~~**0168** – Commercial – 3-1-21 – Blackberry Lane⁴³~~
- **0168a** – Agriculture – 3-1-21 - Blackberry Lane
Potential from application of pesticides/herbicides to field.
Owner/Responsible Person - Kenneth & Hazel Mohan

⁴² PSOC #0167 - Removed from Source Protection/Class 2 Groundwater Area upon approval of Drinking Water & Groundwater Protection Division in December 2011.

⁴³ PSOC #0168 – Sand & gravel extraction ceased operations in 2017.

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- **0168b-** Agriculture – 3-1-21 – 1553 Town Farm Road
Potential contamination from small-scale farm operation.
Owner/Responsible Person – Kenneth Mohan
- **0168c-** Residential – 3-1-21 – 1553 Town Farm Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Kenneth Mohan
- **0168d-** Residential – 3-1-21 – 1553 Town Farm Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Kenneth Mohan
- **0168e-** Residential – 3-1-21 – 1445 Town Farm Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Thomas McLaughlin
- **0168f-** Residential – 3-1-21 – 1445 Town Farm Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Thomas McLaughlin
- ~~**0169-0173** - Residential – (3-1-22 – 3-1-23.71)⁴⁴~~
- **0174** - Residential – 3-1-23.62 – 1919 Town Farm Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Andrew Jackson
- **0175** - Residential – 3-1-23.61 – 1921 Town Farm Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Paul Felion
- ~~**0176** - Forest – 3-1-23.8 – Town Farm Road⁴⁵~~
- **0177-** Residential – 3-1-30 – 1472 Town Farm Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Kirk Wolf

⁴⁴ PSOC #0169-0173 - Removed from Source Protection/Class 2 Groundwater Area upon approval of Drinking Water & Groundwater Protection Division in December 2011.

⁴⁵ PSOC #0176 - Removed from Source Protection/Class 2 Groundwater Area upon approval of Drinking Water & Groundwater Protection Division in December 2011.

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- **0177a-** Residential – 3-1-30 – 1472 Town Farm Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Kirk Wolf
- **0178 -** Residential – 3-1-31 – 1406 Town Farm Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Mary Volk
- **0178a-** Residential – 3-1-31 – 1406 Town Farm Road⁴⁶
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Mary Volk
- **0178b-** Residential – 3-1-31 – 1406 Town Farm Road
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Barry McKeighan
- ~~**0179 & 0179a** – Residential – 3-1-32 – 1390 Town Farm Road⁴⁷~~
- **0180 -** Residential – 3-1-34 – 1399 Town Farm Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Glen Waldrip
- **0180a-** Residential – 3-1-34 – 1399 Town Farm Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Glen Waldrip
- **0181 -** Residential – 3-1-35 – 1429 Town Farm Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Kenneth Mohan
- **0181a-** Residential – 3-1-35 – 1429 Town Farm Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Kenneth Mohan

⁴⁶ PSOC #0178 – Swimming pool removed in 2015.

⁴⁷ PSOC #0179 & 0179a - Removed from Source Protection/Class 2 Groundwater Area upon approval of Drinking Water & Groundwater Protection Division in December 2011.

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- **0182** - Residential – 3-1-37 – 1489 Town Farm Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Kenneth Mohan
- **0182a**- Residential – 3-1-37 – 1489 Town Farm Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Kenneth Mohan
- **0182b**- Residential – 3-1-37 – 1491 Town Farm Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Douglas Mohan
- **0182c**- Residential – 3-1-37 – 1491 Town Farm Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Douglas Mohan
- **0182d**- Residential – 3-1-37 – 1491 Town Farm Road
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Douglas Mohan
- **0183** - Residential – 7-1-26 – 1155 Richmond Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Christopher Lekberg
- **0183a**- Residential – 7-1-26 – 1155 Richmond Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Christopher Lekberg
- **0183b** - Agriculture – 7-1-26 – 1155 Richmond Road
Potential contamination from application of pesticides/herbicides to field.
Owner/Responsible Person – Christopher Lekberg
- **0183c**- Agriculture – 7-1-26 – 1155 Richmond Road
Potential contamination from small scale farm operation.
Owner/Responsible Person – Christopher Lekberg
- **0184** – Agriculture – 7-1-30 – Newton Road
Potential contamination from application of pesticides/herbicides to field.

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Owner/Responsible Person – Rodney Bicknell & Karla Berger

- **0185** – Agriculture – 7-1-31 – Newton Road
Potential contamination from application of pesticides/herbicides to field.
Owner/Responsible Person – Goodrich Family Farm
- **0186** – Forest – 7-1-32 – Newton Road
Potential contamination from forest harvesting.
Owner/Responsible Person – A Johnson Company
- **0187** – Residential – 16-20-3 - 278 Newton Road
Potential contamination from aboveground storage tank that contains #2
fuel oil or kerosene for heating purposes
Owner/Responsible Person – Jeffrey Griffin
- **0188** – Residential – 16-20-4.04 – 220 Newton Road
Potential contamination from aboveground storage tank that contains #2
fuel oil or kerosene for heating purposes
Owner/Responsible Person – Frank James
- **0254** - Agriculture – 16-20-4.01 – Newton Road
Potential contamination from application of pesticides/herbicides to cornfield.
Owner/Responsible Person – John, Warren, William Nop
- **0255** - Agriculture – 16-20-4.05 – Newton Road
Potential contamination from application of pesticides/herbicides to cornfield.
Owner/Responsible Person – Rodney Bicknell
- **0189** – Forest – 15-20-1
Potential contamination from forest harvesting.
Owner/Responsible Person – William Brooks
- **0239** – Residential – 15-22-1 – 29 Fox Road
Septic effluent and disposal of household hazardous wastes into septic
tank and leach field.
Owner/Responsible Person – Joseph & Anita Lao
- **0239a**-Residential – 15-22-1 – 29 Fox Road
Potential contamination from aboveground storage tank that contains #2
fuel oil or kerosene for heating purposes
Owner/Responsible Person – Joseph & Anita Lao
- **0190** – Residential – 15-22-2 – 47 Fox Road
Septic effluent and disposal of household hazardous wastes into septic
tank and leach field.
Owner/Responsible Person – Justin & Jodi Pelkey

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- **0190a**-Residential – 15-22-2 – 47 Fox Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Justin & Jodi Pelkey
- **0191** – Residential –15-22-3 – 67 Fox Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Franklyn Sheldrick
- **0191a**-Residential – 15-22-3 – 67 Fox Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Franklyn Sheldrick
- **0192** – Residential - 15-22-4 – 69 Fox Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Timothy Prior
- **0192a**-Residential – 15-22-4 – 69 Fox Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Timothy Prior
- **0193** – Residential - 15-22-5 – 99 Fox Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Amber Lovely
- **0193a**-Residential – 15-22-5 – 99 Fox Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Amber Lovely
- **0194** – Residential - 15-22-8 – 145 Fox Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Ryan Kelly
- **0194a**-Residential – 15-22-8 – 145 Fox Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Ryan Kelly

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- **0195** – Residential – 15-22-9 – 177 Fox Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Todd & Betty Bayley
- **0195a**-Residential – 15-22-9 – 177 Fox Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Todd & Betty Bayley
- **0196** – Residential – 15-22-10 – 197 Fox Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Laura Bagley
- **0196a**-Residential – 15-22-10 – 197 Fox Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Laura Bagley
- **0197** – Residential – 15-22-11 – 211 Fox Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Derrick Bilodeau
- **0197a**-Residential – 15-22-11 – 211 Fox Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Derrick Bilodeau
- **0198** – Residential – 15-22-12 – 212 Fox Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Geraleen Reed
- **0198a**-Residential – 15-22-12 – 212 Fox Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Geraleen Reed
- **0199** – Residential – 15-22-13 – 188 Fox Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Gary & Jeanine Griffin
- **0199a**-Residential – 15-22-13 – 188 Fox Road

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Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Gary & Jeanine Griffin

- **0200** – Residential – 15-22-14 – 160 Fox Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – David Atherton
- **0200a** -Residential – 15-22-14 – 160 Fox Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – David Atherton
- **0240** – Residential – 15-22-15 – 148 Fox Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Janet Coolidge
- **0240a**-Residential – 15-22-15 – 148 Fox Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Janet Coolidge
- **0201** – Residential – 15-22-16 – 108 Fox Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Caroline Denis
- **0201a** -Residential – 15-22-16 – 108 Fox Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Caroline Denis
- **0202** – Residential – 15-22-17 – 26 Fox Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Carolyn Costello
- **0202a**-Residential – 15-22-17 – 26 Fox Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Carolyn Costello
- **0241** – Residential – 15-22-17.01 – 70 Fox Road
Septic effluent and disposal of household hazardous wastes into septic

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tank and leach field.

Owner/Responsible Person – Maria Ammatuna

- **0241a**-Residential – 15-22-17.01 – 70 Fox Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Maria Ammatuna
- **0203** – Residential – 15-22-19 – 16 Chipmunk Lane
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Mary Mitchell
- **0203a**-Residential – 15-22-19 – 16 Chipmunk Lane
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Mary Mitchell
- **0242** – Residential – 15-22-20 – 30 Chipmunk Lane
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Robert Dumas
- **0242a**-Residential – 15-22-20 – 30 Chipmunk Lane
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Robert Dumas
- **0204** – Residential – 15-22-21 – 46 Chipmunk Lane
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Michael Wilber
- **0204a**-Residential – 15-22-21 – 46 Chipmunk Lane
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Michael Wilber
- **0204b**- Residential – 15-22-21 – 46 Chipmunk Lane
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Michael Wilber
- **0205** – Residential – 15-22-22 – 45 Chipmunk Lane
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.

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Owner/Responsible Person – Frank Wooten

- **0205a**-Residential – 15-22-22 – 45 Chipmunk Lane
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Frank Wooten
- **0205b**- Residential – 15-22-22 – 45 Chipmunk Lane
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Frank Wooten
- **0206** – Residential - 15-22-23 – 681 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Stephen & Kay Pelletier
- **0206a**-Residential – 15-22-23 – 681 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Stephen & Kay Pelletier
- **0207** – Residential – 15-22-24 – 31 Chipmunk Lane
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Gabriel McGuigan
- **0207a**-Residential – 15-22-24 – 31 Chipmunk Lane
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Gabriel McGuigan
- **0208** – Residential – 15-22-25 – 182 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Chad & Chrysty Palmer
- **0208a**-Residential – 15-22-25 – 182 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Chad & Chrysty Palmer
- **0209** – Residential – 15-22-26 – 651 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Scott Malbon

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- **0209a**-Residential – 15-22-26 –651 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Scott Malbon
- **0209b**- Residential – 15-22-26 – 651 Deer Run Road
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Scott Malbon
- **0210** – Residential – 15-22-27 – 627 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Robert Bordeau
- **0210a**-Residential – 15-22-27 – 627 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Robert Bordeau
- **0210b**- Residential – 15-22-27 – 627 Deer Run Road
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Robert Bordeau
- **0243** – Residential – 15-22-28 – 601 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Ralph French Jr
- **0243a**-Residential – 15-22-28 – 601 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Ralph French Jr
- **0211** – Residential – 15-22-29 – 585 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Phillip Letourneau
- **0211a**-Residential – 15-22-29 – 585 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Phillip Letourneau

Source Protection Plan

- **0212** – Residential – 15-22-30 – 567 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Kathleen Murphy
- **0212a**-Residential – 15-22-30 – 567 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Kathleen Murphy
- **0213** – Residential – 15-22-31 – 545 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Vickie Haggas
- **0213a**-Residential – 15-22-31 – 545 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Vickie Haggas
- **0214** – Residential – 15-22-32 – 521 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Keith Arlund
- **0214a**-Residential – 15-22-32 – 521 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Keith Arlund
- **0215** – Residential – 15-22-33 – 509 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Rock Laframboise
- **0215a**-Residential – 15-22-33 – 509 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Rock Laframboise
- **0215b**- Residential – 15-22-33 – 509 Deer Run Road
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Rock Laframboise
- **0216** – Residential – 15-22-34 – 471 Deer Run Road

Source Protection Plan

Septic effluent and disposal of household hazardous wastes into septic tank and leach field.

Owner/Responsible Person – Joel Landesman

- **0216a**-Residential – 15-22-34 – 471 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Joel Landesman
- **0216b**- Residential – 15-22-34 – 471 Deer Run Road
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – Joel Landesman
- **0217** – Residential – 15-22-35 – 445 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – William Brooks
- **0217a**-Residential – 15-22-35 – 445 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – William Brooks
- **0217b**- Residential – 15-22-35 – 445 Deer Run Road
Potential contamination from use and storage of chemicals in association with aboveground swimming pool.
Owner/Responsible Person – William Brooks
- **0218** – Residential – 15-22-36 – 694 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Alicia Owen
- **0218a**-Residential – 15-22-36 – 694 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Alicia Owen
- **0219** – Residential – 15-22-37 – 668 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Larry Danyow
- **0219a**-Residential – 15-22-37 – 668 Deer Run Road
Potential contamination from aboveground storage tank that contains #2

Source Protection Plan

fuel oil or kerosene for heating purposes
Owner/Responsible Person – Larry Danyow

- **0244** – Residential – 15-22-38 – 658 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Steven Wernhoff
- **0244a**-Residential – 15-22-38 – 658 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Steven Wernhoff
- **0220** – Residential – 15-22-39 – 622 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Lawrence & Mona Rogers
- **0220a**-Residential – 15-22-39 – 622 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Lawrence & Mona Rogers
- **0221** – Residential – 15-22-41 – 582 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Shane Quenneville
- **0221a**-Residential – 15-22-41 – 582 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Shane Quenneville
- **0222** – Residential - 15-22-42 – 528 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Gregory Bailey
- **0222a**-Residential – 15-22-42 – 528 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Gregory Bailey
- **0223** – Residential – 15-22-43 – 494 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.

Source Protection Plan

Owner/Responsible Person – Rodney Pulsifer

- **0223a**-Residential – 15-22-43 – 494 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Rodney Pulsifer
- ~~**0223b**-Residential – 15-22-43 – 494 Deer Run Road⁴⁸~~
- **0224** – Residential – 15-22-44 – 436 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Brian McIntire
- **0224a**-Residential – 15-22-44 – 436 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Brian McIntire
- **0245** – Residential – 15-22-45 – 410 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – John Young
- **0245a**-Residential – 15-22-45 – 410 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – John Young
- **0225** – Residential - 15-22-47 – 358 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Carol Bonsignore
- **0225a**-Residential – 15-22-47 – 358 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Carol Bonsignore
- **0246** – Residential – 15-22-48 – 340 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Wallingford P&H

⁴⁸ PSOC #0223b - Swimming pool removed in 2009.

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- **0246a**-Residential – 15-22-48 – 340 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Wallingford P&H
- **0226** - Residential – 15-22-49 – 312 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Paul & Sara Sokolowski
- **0226a**-Residential – 15-22-49 – 312 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Paul & Sara Sokolowski
- **0247** – Residential – 15-22-50 – 298 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Robert Hunter
- **0247a**-Residential – 15-22-50 – 298 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Robert Hunter
- **0227** – Residential – 15-22-52 – 220 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Mary Alexander
- **0227a**-Residential – 15-22-52 – 220 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Mary Alexander
- **0248** – Residential – 15-22-52.01 – 236 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Thatcher Resources, LLC
- **0248a**-Residential – 15-22-52.01 – 236 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Thatcher Resources, LLC
- **0249** – Residential – 15-22-53 – 239 Deer Run Road

Source Protection Plan

Septic effluent and disposal of household hazardous wastes into septic tank and leach field.

Owner/Responsible Person – Michael & Natalie Steen

- **0249a**-Residential – 15-22-53 – 239 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Michael & Natalie Steen
- **0250** – Residential – 15-22-54 – 267 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Stephanie Wilbur
- **0250a**-Residential – 15-22-54 – 267 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Stephanie Wilbur
- **0228** – Residential – 15-22-56 – 315 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Paul & Deborah Many
- **0228a**-Residential – 15-22-56 – 315 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Paul & Deborah Many
- **0229** – Residential – 15-22-57 – 335 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Barbara Watters
- **0229a**-Residential – 15-22-57 – 335 Deer Run Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Barbara Watters
- **0230** – Residential – 15-22-59 – 375 Deer Run Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Robert King
- **0230a**-Residential – 15-22-59 – 375 Deer Run Road
Potential contamination from aboveground storage tank that contains #2

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fuel oil or kerosene for heating purposes
Owner/Responsible Person – Robert King

- **0251** – Residential – 15-22-60 – 25 Spring Pond Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Brian & Tina Wiles
- **0251a**-Residential – 15-22-60 – 25 Spring Pond Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Brian & Tina Wiles
- **0231** – Residential - 15-22-61 – 54 Spring Pond Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Richard Bird
- **0231a**-Residential – 15-22-61 – 54 Spring Pond Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Richard Bird
- **0232** – Residential – 15-22-62 – 76 Spring Pond Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Barry Gearwar
- **0232a**-Residential – 15-22-62 – 76 Spring Pond Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Barry Gearwar
- **0252**– Residential – 15-22-63 – 95 Spring Pond Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.
Owner/Responsible Person – Dorothea Rodda
- **0252a**-Residential – 15-22-63 – 95 Spring Pond Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – Dorothea Rodda
- **0253** – Residential – 15-22-65 – 102 Spring Pond Road
Septic effluent and disposal of household hazardous wastes into septic tank and leach field.

Source Protection Plan

Owner/Responsible Person – David Philipsen

- **0253a**-Residential – 15-22-65 – 102 Spring Pond Road
Potential contamination from aboveground storage tank that contains #2 fuel oil or kerosene for heating purposes
Owner/Responsible Person – David Philipsen
- **0233** – Residential – 15-22-79
Potential contamination from small-scale sand and gravel operation.
Owner/Responsible Person – William Brooks
- **0234** – Municipal – Ray Forrest Road, Kennedy Road, North Street, Newton Road, Middle Road, Furnace Road, Town Farm Road, Richmond Road, Chapel Hill Road, Deer Run Road, Fox Road and Chipmunk Lane.
Potential contamination from road salt and petroleum releases associated with traffic corridors.
Owner/ Responsible Person - Town of Brandon
- **0235** – Municipal - Newton Road, North Street, Middle Road, Forest Dale Road and Furnace Road.
Potential contamination from leaking municipal sewer lines.
Owner/Responsible Person – Town of Brandon
- **0236** – Municipal – Forest Dale Road (Route 73)
Potential contamination from road salt and petroleum releases associated with traffic corridors.
Owner/ Responsible Person - Vt Agency of Transportation
- **0237** – Public Service
Potential contamination from but not limited to application of herbicides and pesticides in right of way.
Owner/ Responsible Person - Green Mountain Power
Owner/ Responsible Person - Consolidated Communications

MANAGEMENT OF PSOC'S

Former and existing land uses and potential sources of contamination associated with the Source Protection Area include agriculture activities, sand and gravel operations, furniture manufacturing, traffic corridors and on-site septic systems. Future land uses within this area will continue to include these activities. **Appendix A** contains a list of all landowners and their mailing addresses in the Source Protection Area.

The Town of Brandon has been very proactive in its efforts to protect the aquifer by:

1. Adopting an Aquifer Protection section in the Brandon Land Use Ordinance on 1/10/89. The ordinance establishes permitted and non-permitted uses allowed in the aquifer. A copy of the ordinance appears in **Appendix E**.

Source Protection Plan

2. Adoption of on-site septic system ordinance.
3. Addressing the need to further protect the aquifer in the Brandon Town Plan.
4. Working diligently with the Fire District to address any current or future needs to protect our abundant water supply.

The management of the potential sources of contamination will be achieved by various methods and by the risk that it may pose on the aquifer. While every PSOC should be treated separately, management of most of them will use the same technique. The following lists contain the management of the PSOC's that occur in the aquifer.

Agriculture

The BLUO states "Use of pesticides, herbicides and fertilizers shall be prohibited within 400 feet of any well maintained by any municipal fire district."

1. Use Best Management Practices for Agriculture. A copy of this may be obtained at the Fire District Office or from the Department of Agriculture.
2. Work with Department of Agriculture to educate farmers/landowners.
3. Notify local applicators of pesticides, herbicides or fertilizers of the Source Protection Area and request use of Best or Accepted Management Practices.

Furniture Manufacturing – High Pond Woodworking

The BLUO states "All generation, handling, storage and disposal of hazardous or toxic materials (as defined in 10 VSA 22 [6]) or hazardous wastes (as defined in 10 VSA 6602 [4]) shall be in compliance, except as provided below, with regulations issued by the Vermont Agency of Natural Resources."

1. Furniture manufacturing is not permitted as a new use in the Aquifer.
1. If a hazardous waste spill occurs within the Source Protection Area the 24-hour emergency response number should be contacted. **1-800-641-5005**
2. Contact the Vermont Drinking Water & Groundwater Protection Division to determine the best means to deal with the emergency. **1-802-828-1535**
3. Contact the Town of Brandon Health Officer, Brandon Fire District Prudential Committee, Town Manager and other Town Officials to inform them of the emergency and the procedures that will be implemented.
4. Contact the Vermont Department of Health to apprise them of the nature of problem. **1-800-464-4343**
5. Because of the proximity to Baker Well (#1), the facility is visually inspected on a weekly basis and is physically inspected on a semi-annual basis.

Furniture Manufacturing – New England Woodcraft

See BLUO **Section 615- Hazardous Materials**

1. Furniture manufacturing is not permitted as a new use in the Aquifer.
2. New England Woodcraft is a small quantity generator of hazardous waste. The Waste Management Division governs them.
3. If a hazardous waste spill occurs within the Source Protection Area the 24-hour emergency response number should be contacted. **1-800-641-5005**
4. Contact the Vermont Drinking Water & Groundwater Protection Division to determine the best means to deal with the emergency. **1-802-828-1535**

Source Protection Plan

5. Contact the Town of Brandon Health Officer, Brandon Fire District Prudential Committee, Town Manager and other Town Officials to inform them of the emergency and the process that will be implemented.
6. New England Woodcraft has reduced its generation of hazardous waste by using new technology involving environmentally friendly practices.
7. The facility is physically inspected on a semi-annual basis.

Sand and Gravel Extraction

1. Sand and gravel extraction is not permitted as a new use in the Aquifer
2. Existing sand and gravel extraction is a conditional use in the Aquifer.
3. Excavation of sand and gravel should not extend closer than four feet above the annual high ground water table.
4. Refuel equipment outside the extraction area.
5. Existing sand and gravel operations should be permitted to continue operation subject to impacts on the aquifer.
6. Mail letters to landowner/operators of sand and gravel operations.

Household Hazardous Waste

1. **Appendix C** contains a list of household products and the chemicals that are associated with them.
2. Store household hazardous materials in original labeled containers with lids and caps tightly sealed, away from areas through which they could contaminate groundwater.
3. The Rutland County Solid Waste District offers household hazardous waste pickup at the Brandon transfer station different times throughout the year. The RCSWD Household Hazardous Waste (HHW) Depot located on Gleason Road in Rutland City is open Tuesdays and Thursdays from 10am to 3pm. Most HHW is accepted from District residents at no charge. Call the HHW depot at **770-1333** for further information.
4. **Appendix C** contains public education information that will be sent to landowner/responsible person in the Source Protection Area.

On-Site Septic Systems

There are 112 on-site septic systems located in the Source Protection Area. 43 of these systems are part of a planned residential development located up-gradient of the wells.

1. A sewage disposal ordinance was adopted on 4/23/94.
2. In areas within the SPA that are not served by municipal sewage systems, the minimum allowable lot size shall be two (2) acres.
3. Have your septic system inspected annually and pumped out regularly (every three years or less); no chemical or other additive can be a substitute for this, and these septic system chemicals actually can prevent your septic system from functioning properly.
4. Be cautious about what you put into your system; substances like coffee grounds, cigarette butts, sanitary items, or fats do not break down easily in septic systems, and chemicals like paints, solvents, oil, and pesticides will go from your septic system into the ground water.
5. Recommend that use of septic cleaners containing organic solvents be prohibited.

Source Protection Plan

6. Recommend the extension of municipal sewer system to serve PRD and homes within the vicinity of the mains.
7. Monitor nitrate levels within the SPA by obtaining reports from private water systems as well as using any other data that may be available.
8. Conserve water in your home.
9. **Appendix C** contains public education information that will be sent to landowner/responsible person in the Source Protection Area.

Sewer Lines / Pump Station

1. Maintain sewer lines/pump stations using proper safety and maintenance procedures to prevent leaks and or contamination.
2. Notify Brandon Fire District of any major contamination (broken sewer main, sewer overflow, etc.) that occurs in the SPA.

Underground Storage Tanks

There are currently 2 underground storage tanks located within the Source Protection Area. The UST at the Neshobe School poses the biggest risk because of its proximity to the Baker (#1) Well. Section 615 B [3] of the BLUO states “Underground storage of hazardous materials is prohibited entirely within the Aquifer Zone”.

1. Recommend that residential UST’s containing fuels are replaced.
2. Check UST’s regularly for leaks.
3. Install leak detection devices (if applicable).
4. If a hazardous waste spill occurs within the Source Protection Area the 24-hour emergency response number should be contacted. **1-800-641-5005**
5. Contact the Vermont Drinking Water & Groundwater Protection Division to determine the best means to deal with the emergency. **1-802-828-1535**
6. Contact the Town of Brandon Health Officer, Brandon Fire District Prudential Committee, Town Manager and other Town Officials to inform them of the emergency and the procedures that will be implemented.
7. Send letter and public education information that appears in **Appendix C** to landowner/responsible person within the Source Protection Area.

Aboveground Storage Tanks

There are 230 aboveground storage tanks for fuel oil located within the Source Protection Area. Most of these tanks are located in the basements of homes.

1. AST’s should be placed on a diked, impermeable surface to prevent spills or leaks from reaching groundwater. Floor drains should be plugged to prevent discharge of leaks.
2. Inspect tanks for leaks regularly.
3. If an oil spill occurs within the Source Protection Area the 24-hour emergency response number should be contacted. **1-800-641-5005**
4. Contact the Vermont Drinking Water & Groundwater Protection Division to determine the best means to deal with the emergency. **1-802-828-1535**
5. Contact the Town of Brandon Health Officer, Brandon Fire District Prudential Committee, Town Manager and other Town Officials to inform them of the emergency and the procedures that will be implemented.

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6. Send letter (See **Appendix B**) and public education information that appears in **Appendix C** to landowner/responsible person within the Source Protection Area.
7. Send letter to local fuel dealers to notify them of the SPA and to request to exercise caution during delivery.

Forestry

1. Forest harvesting is permitted in the Aquifer.
2. Use best or acceptable management practices as set forth by the State of Vt., the Vt. Department of Agriculture, the U.S. Natural Resources Conservation Service and the Town of Brandon.

Road Salt Application/Storage

1. Storage of road salt is not a permitted use in the aquifer. (See Brandon Land Use Ordinance)
2. Mail letters to local and state transportation officials to use responsible application and or reduction of road salt in Source Protection Areas.

Swimming Pools

There are 23 swimming pools located within the Source Protection Area. Pools do not pose a significant risk to the aquifer.

1. Store pool chemicals in original labeled containers with lids and caps tightly sealed, away from areas through which they could contaminate groundwater.
2. Inspect and maintain swimming pool on a regular basis.

Utility Right-of-way

1. Mail letter to local utility companies and request reduction in application of pesticides, herbicides or fertilizers in the Source Protection Area and use of Best or Accepted Management Practices.

MANAGEMENT OF SOURCE PROTECTION AREA

Measures to control and manage existing and future risks of contamination in the Source Protection Area will be carried out by the water system operator(s), local, state, and federal officials and the PSOC's responsible party and will include:

1. Conducting a walking inspection of the Source Protection Area on a semi-annual basis to evaluate activities and ensure adherence to the SPP.
2. Distributing letter (**See Appendix B**) with a map to all landowners/businesses in the SPA explaining aquifer protection. Specific PSOC activities that have been identified will be discussed with measures that will be necessary to minimize the risk of contamination.
3. Distributing letter (**See Appendix B**) of information related to the SPA with a map showing the SPA and land use activities that occur to the Town of Brandon Select Board, Zoning and Planning Boards, Health Officer, Town Clerk, Public Works Superintendent, Rutland Regional Planning Commission, DEC Regional and Act 250 offices.

Source Protection Plan

4. Submitting copy of SPP with related SPA maps to the Drinking Water & Groundwater Protection Division with request that they distribute to appropriate permitting agencies and notify the water system operator of potential land use changes, permit requests or land use or facility inspections.
5. Request review of SPP for Brandon Fire District No 2 (**WSID-5417**) annually and notification of any potentially threatening activities.
6. Attending local, regional and state meetings and hearings to educate the authorities on the SPA, as well as explaining their role in protecting the SPA from future land uses or land use changes.
7. Continuing the process of regulating future land uses within the SPA on a local basis by incorporating them into the Brandon Town Plan.
8. Review the source protection plan on a yearly basis and update the plan every three years by submitting a report to Drinking Water & Groundwater Protection.
9. Petition the Environmental Protection Agency (EPA) to designate the Neshobe Watershed Area as a Sole Source Aquifer. A Sole Source Aquifer is all of the area that may contribute water to the aquifer, which extends to the mountains in the east and offers protection at the federal level.
10. Search for and prepare a list of alternative sites in the Town of Brandon that may be suitable for a municipal drinking water supply in the event of loss of water due to quantity shortage or contamination.

The management of the Source Protection Area will be addressed by several methods.

1. Ownership and Control of Isolation Zone

The Brandon Fire District will make every effort to prevent future land uses or activities within 200 feet of the well that would be excluded from the Water Supply Rule for a new well.

The following are not permitted land uses in the isolation zone according to the Vermont Water Supply Rule:

- a. Application of nitrogen, pesticides and herbicides;
- b. Buildings other than those required by the water system;
- c. Parking of motor vehicles;
- d. Chemical or fuel storage other than natural gas or propane which is required by the water system;
- e. Swimming pool;
- f. Salted or paved roads passing through the area;
- g. Septic tanks, subsurface disposal systems and sewer lines, and
- h. Any other activity which may contaminate the supply.

The Fire District owns 200 feet around the Baker Well (#1). The Fire District must be active in its efforts to ensure that this area is protected due to the shallow unconfined aquifer that makes it more susceptible to contamination than the other wells.

The Fire District owns 100 feet around the Mohan Well (#2). Although this well has a confining layer of clay, efforts should be made to further protect this area.

Source Protection Plan

The Fire District owns and controls the 200-foot isolation zone around the Berry Well (#3). This well is in the same confined aquifer as the Mohan Well.

2. Posting Signs

The Fire District will post signs at wells stating the following “Tampering with this facility is a federal offense.”

3. Enforcement of Regulations

The Fire District works with local, state and federal agencies to ensure that all rules and regulations are enforced. Any potential violations are addressed in a timely manner.

4. Monitoring Well Program

The Fire District has begun an organized monitoring well program that will help obtain valuable information in regards to the Aquifer. Monitoring wells will be measured four times per year or more frequently during drought conditions.

5. Water Conservation Program

Water Conservation is an important tool in source protection. Installation of water meters, leak detection, use of low flow devices, etc. can preserve the sources of water as well as reducing overall costs to operate the system.

6. Public Education

Public education is a vital tool in the protection of the Source Protection Area. It raises community awareness and encourages action at the local level. The local citizens are a valuable and important resource in protecting the water supply.

The Fire District:

- a. Participates with the local elementary school annually to provide education about our water system and how it works.
- b. Includes public education information to consumers yearly in its Consumer Confidence Reports.
- c. Is actively involved in decision making at the local and state level.
- d. Promotes community involvement in the water system.

7. Land Acquisition

Groundwater protection does not always require absolute control. Certain low risk activities using best management practices can be compatible with reasonable care. Control of development and potential threatening activities in the Source Protection Area is guaranteed with ownership. Acquisition and or control of the well isolation zones are top priority. This can be attained by several methods:

- a. Land easement;
- b. Development rights;
- c. Acquisition, and;
- d. Power of eminent domain.

Figures

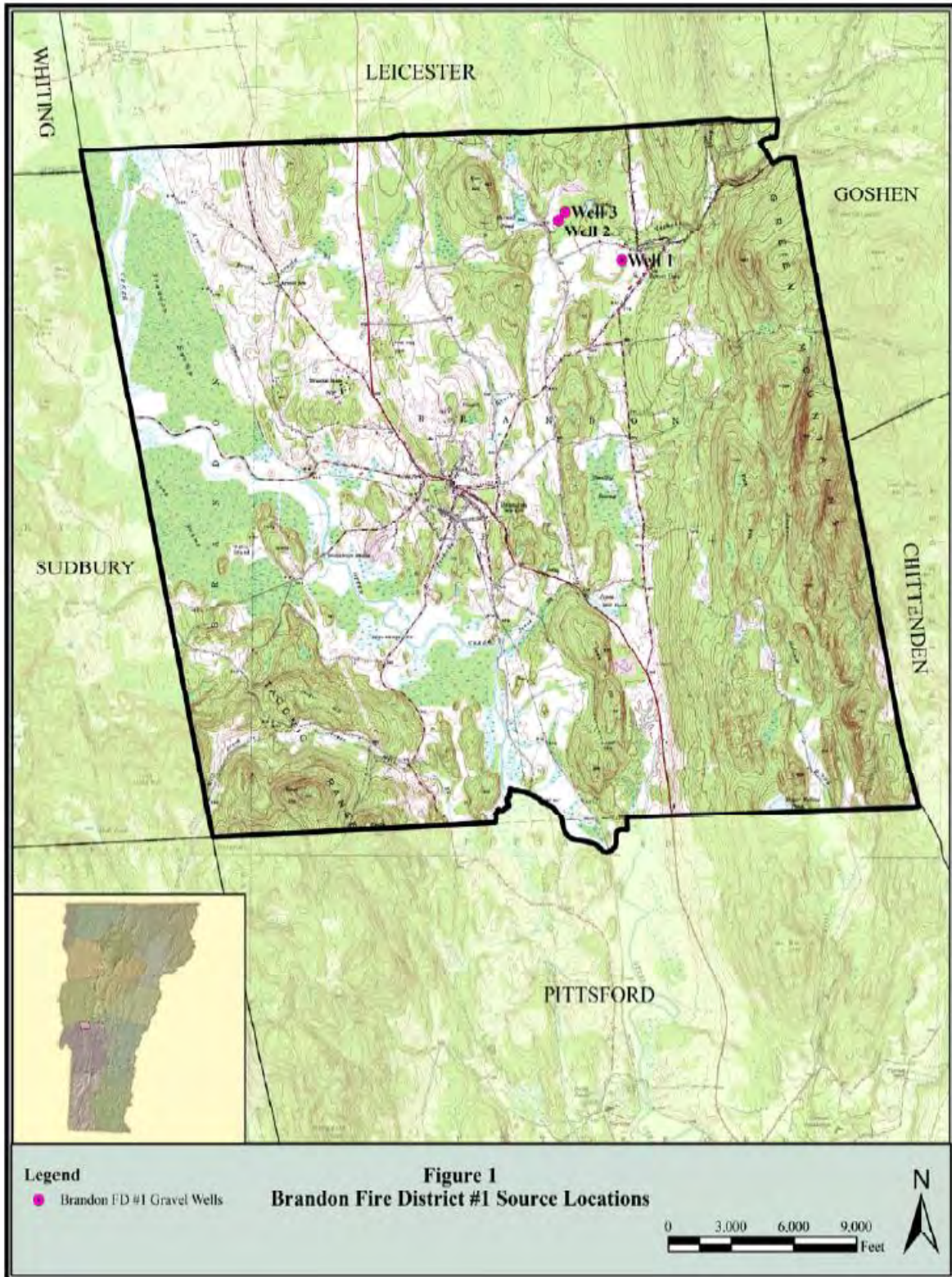
BFD #1 Wells

Source Protection & Class 2 Groundwater Area

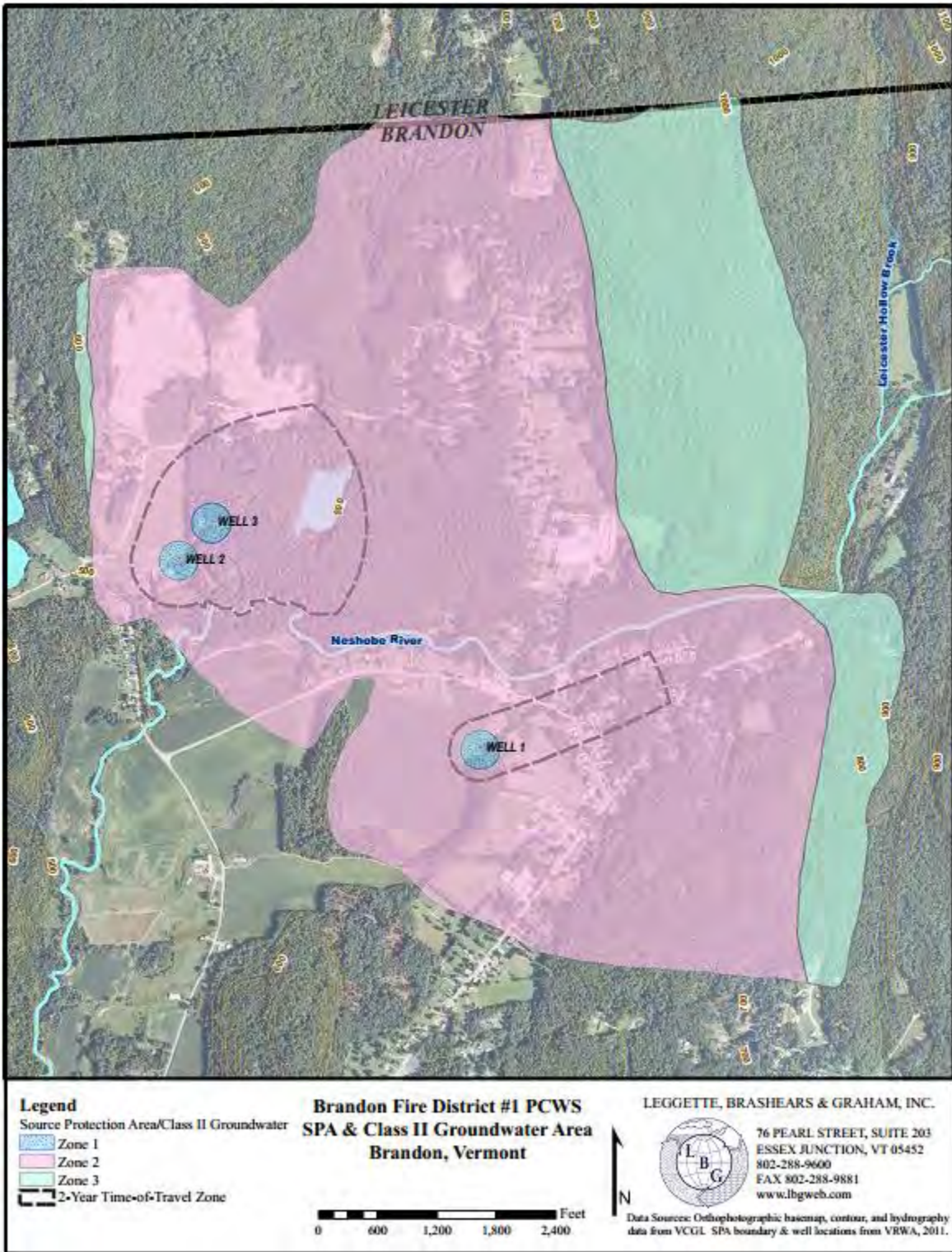
Private Wells in Source Protection Area

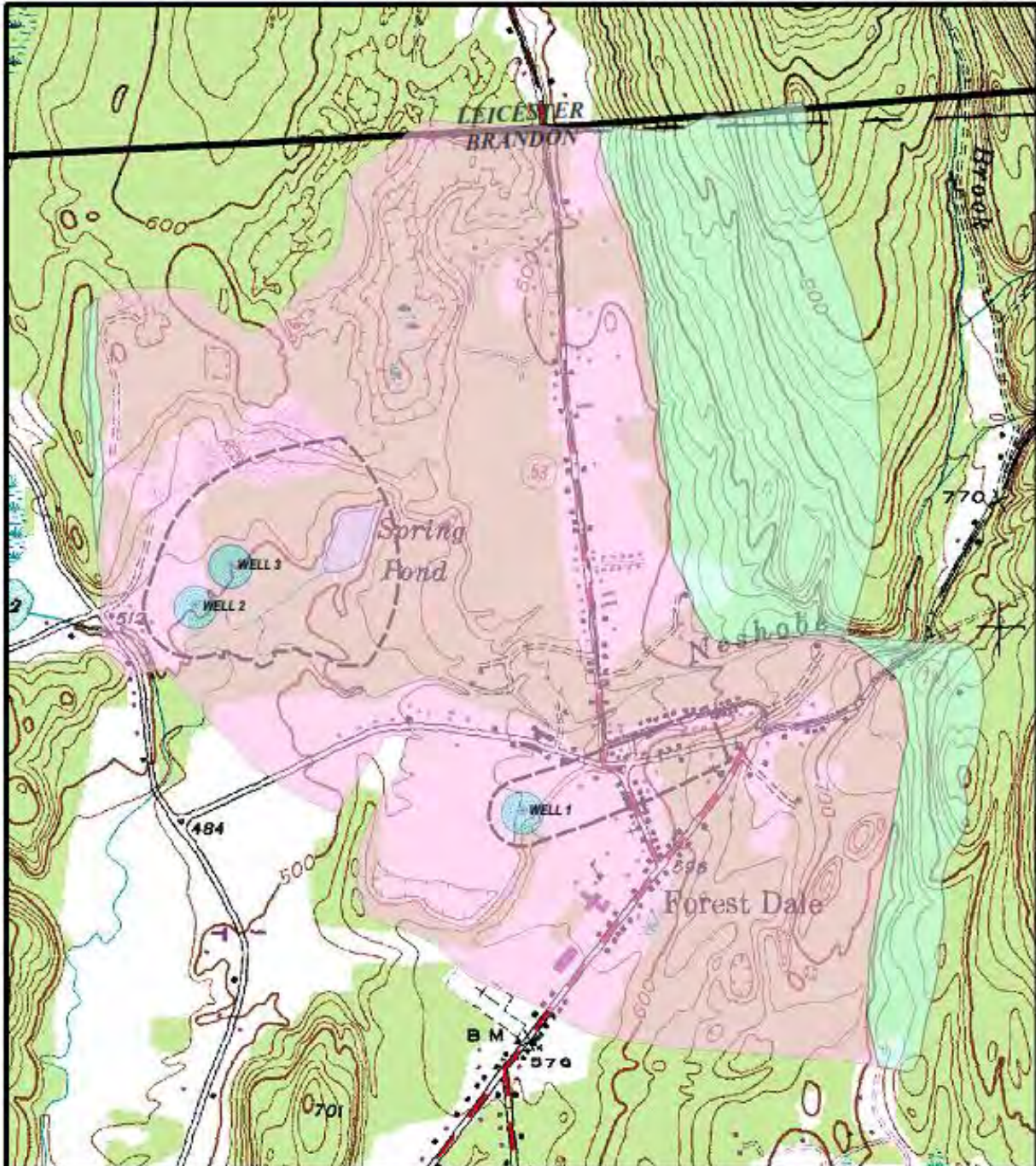
Hazardous Wastes Sites

Source Protection Plan



Source Protection Plan

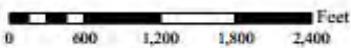




Legend

- Source Protection Area/Class II Groundwater
- Zone 1
 - Zone 2
 - Zone 3
 - 2-Year Time-of-Travel Zone

**Brandon Fire District #1 PCWS
SPA & Class II Groundwater Area
Brandon, Vermont**



LEGGETTE, BRASHEARS & GRAHAM, INC.



76 PEARL STREET, SUITE 203
ESSEX JUNCTION, VT 05452
802-288-9600
FAX 802-288-9881
www.lbgweb.com

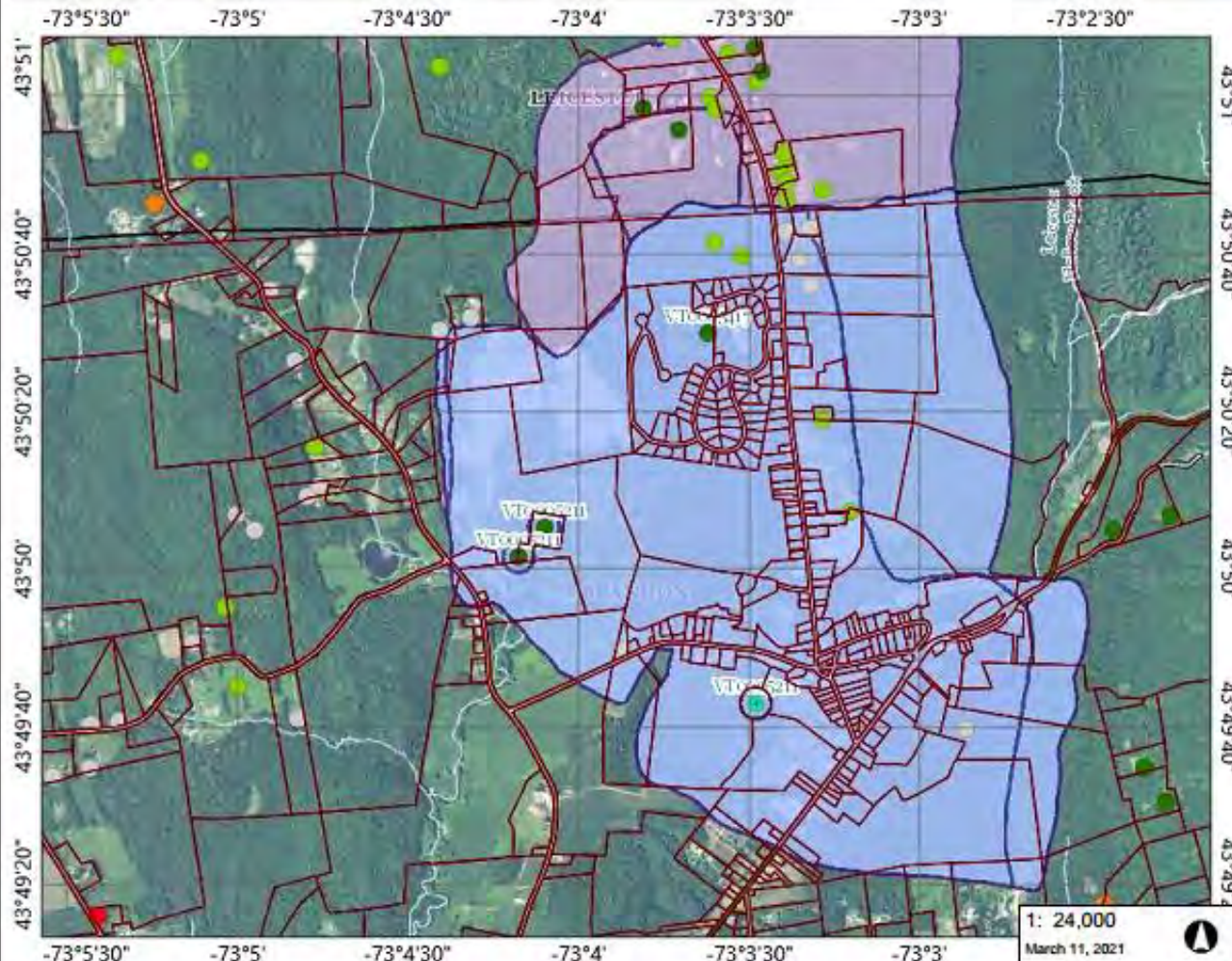
Data Sources: Topographic base map from VCGL
SPA boundary & well locations from VRWA, 2011.



Brandon FD #1 Source Protection Area

Vermont Agency of Natural Resources

vermont.gov



LEGEND

- Private Wells**
 - Incorrectly Located (Pink square)
 - GPS Located (Green circle)
 - Screen Digitized (Light green circle)
 - ES11 Address Matched (Grey circle)
 - Walk/Interview (Orange circle)
 - Unknown Location Method (Red circle)
- Public Water Sources**
 - Active (Light blue circle)
 - Proposed (Yellow circle)
 - Inactive (Dark red circle)
- Ground Water SPA**
 - Active (Dark blue square)
 - Proposed (Light blue square)
 - Inactive (Light purple square)
- Groundwater Classification**
 - II - Designated Drinking Water (Light blue square)
 - IV - Contaminated (Brown square)
- Parcels (standardized)** (White square)
- Roads**
 - Interstate (Thick blue line)
 - US Highway; 1 (Thick red line)
 - State Highway (Thick green line)
 - Town Highway (Class 1) (Thin grey line)
 - Town Highway (Class 2,3) (Thin black line)
 - Town Highway (Class 4) (Thin light grey line)
 - State Forest Trail (Thin black line)
 - Nonroad Easement Walk (Thin black line)

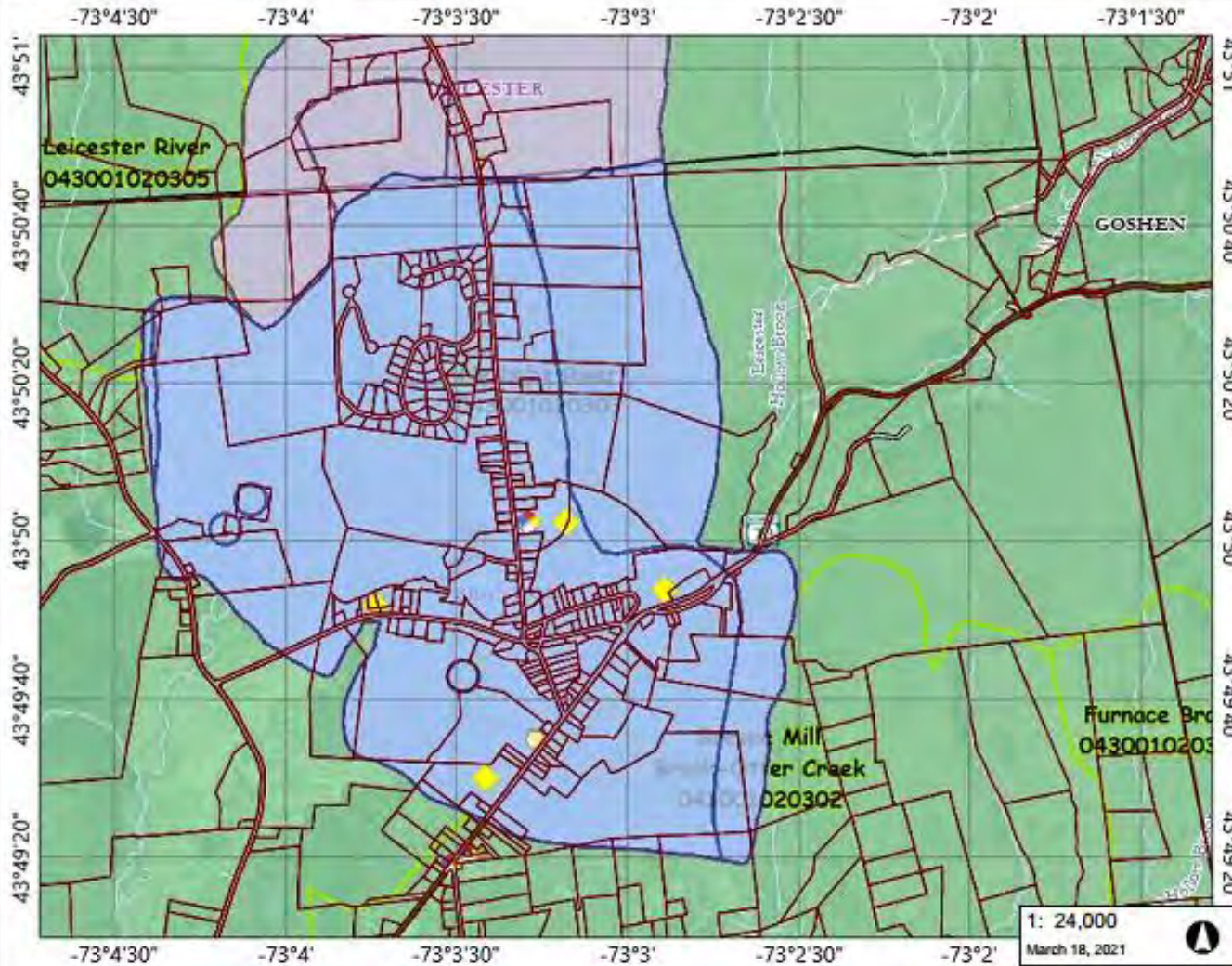
1: 24,000
March 11, 2021

1,219.0 0 610.00 1,219.0 Meters
WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 2000 Ft. 1cm = 240 Meters
© Vermont Agency of Natural Resources THIS MAP IS NOT TO BE USED FOR NAVIGATION

DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.

NOTES

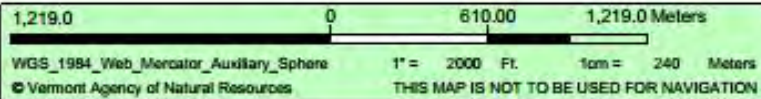
Map created using ANR's Natural Resources Atlas



LEGEND

- Hazardous Site
- ◆ Hazardous Waste Generators
- Underground Storage Tank (w/ Ground Water SPA)
 - Active
 - Proposed
 - Inactive
- Groundwater Classification**
 - II - Designated Drinking Water
 - IV - Contaminated
- Parcels (standardized)**
- Roads**
 - Interstate
 - US Highway; 1
 - State Highway
 - Town Highway (Class 1)
 - Town Highway (Class 2,3)
 - Town Highway (Class 4)
 - State Forest Trail
 - National Forest Trail
 - Legal Trail
 - Private Road/Driveway
 - Proposed Roads
- Stream/River**
 - Stream
 - Intermittent Stream
- Town Boundary

1: 24,000
March 18, 2021



DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.

NOTES

Map created using ANR's Natural Resources Atlas

Appendix A

Landowner/Responsible Person Mailing Address List

Local/State Mailing List

Name	Tax Map No	Location	Mailing Address/PO	Town/City	State	Zip
Travis Little	3-1-14.01	690 Blackberry Lane	690 Blackberry Lane	Brandon	VT	05733
Andrew & Rebecca Mitchell	3-1-14.02	657 Blackberry Lane	657 Blackberry Lane	Brandon	VT	05733
Holden Mountain Corporation	3-1-15	Blackberry Lane	27 West Street	Rutland	VT	05701
RNH Gravel, LLC	3-1-16	Blackberry Lane	158 Pine Woods Road	Pittsford	VT	05763
Eric McClaren	3-1-17	Blackberry Lane	5987 Whipple Hollow Rd	Florence	VT	05744
Carol Parker	3-1-18	Blackberry Lane	25 Grove Street	Brandon	VT	05733
RNH Gravel, LLC	3-1-20	Blackberry Lane	158 Pine Woods Road	Pittsford	VT	05763
Kenneth Mohan	3-1-21	1553 Town Farm Road	1429 Town Farm Road	Brandon	VT	05733
Nature Conservancy	3-1-23.05	Town Farm Road	27 State Street	Montpelier	VT	05602
Paul & Carol Felion	3-1-23.61	1921 Town Farm Road	1921 Town Farm Road	Brandon	VT	05733
Andrew Jackson	3-1-23.62	1919 Town Farm Road	1919 Town Farm Road	Brandon	VT	05733
Kirk Wolf	3-1-30	1472 Town Farm Road	PO Box 111	Forest Dale	VT	05745
Mary Volk	3-1-31	1406 Town Farm Road	1406 Town Farm Road	Brandon	VT	05733
Glen & Wendy Waldrip	3-1-34	1399 Town Farm Road	1399 Town Farm Road	Brandon	VT	05733
Kenneth Mohan	3-1-35	1429 Town Farm Road	1429 Town Farm Road	Brandon	VT	05733
Kenneth Mohan	3-1-37	1489 Town Farm Road	1429 Town Farm Road	Brandon	VT	05733
Brandon Fire District No 1	3-1-38	Blackberry Lane	58 Franklin Street	Brandon	VT	05733
Timothy & Melissa Gibbud	4-1-6.01	14 Churchill Road	PO Box 177	Brandon	Vt	05733
Heather Bierschenk	4-1-6.02	Forest Dale Road	472 Indian Trail	Leicester	VT	05733
Timothy & Melissa Gibbud	4-1-7	14 Churchill Road	PO Box 177	Brandon	Vt	05733
Galen Hutchinson	4-1-12	103 Wagner Road	103 Wagner Road	Brandon	VT	05733
Sarwalstu Corporation	4-1-13	Forest Dale Road	15 Clark Street	Brooklyn Heights	NY	11201
Brandon Fire District No 1	4-1-14	133 Ray Forrest Road	58 Franklin Street	Brandon	VT	05733
Gary Forrest	4-1-15	2805 Forest Dale Road	2805 Forest Dale Road	Brandon	VT	05733
Vt Buildings & General Services	4-1-16	2660 Forest Dale Road	1 National Life Drive	Montpelier	VT	05633
Vt Historic Preservation	4-1-18	Forest Dale Road	1 National life Drive	Montpelier	VT	05620
Linda Prescott	4-1-19	Prescott Lane	1010 W Marshall Street	Norristown	PA	19401
Christopher Lekberg	7-1-26	1155 Richmond Road	1155 Richmond Road	Brandon	VT	05733
John, Warren, William Nop	7-1-30	Newton Road	99 Route 7	Salisbury	VT	05769
Goodrich Family Farm, LLC	7-1-31	Newton Road	1271 Middle Road	Salisbury	VT	05769
A Johnson Company	7-1-32	Newton Road	995 South 116	Bristol	VT	05443
James & Elizabeth Wickis	8-1-1	Kennedy Road	74 West Street	Medway	MA	02053

Charles & Beth Davis	8-1-16	125 Kennedy Road	125 Kennedy Road	Brandon	VT	05733
Carris Properties VT LLC	8-1-17	Forest Dale Road	PO Box 886	Rutland	VT	05702
Craig Frasier Jr	8-1-18	159 Frasier Road	159 Frasier Road	Brandon	VT	05733
Tracey Wyman	8-1-25	114 Wyman Road	114 Wyman Road	Brandon	VT	05733
Elizabeth Betts	8-1-38.04	196 Wyman Road	196 Wyman Road	Brandon	VT	05733
David & Karin Butterfield	8-1-70	97 Ray Forrest Road	97 Ray Forrest Road	Brandon	VT	05733
Justin Cram	15-20-1	North Street	22 Maple Street	Brandon	VT	05733
William Brooks	15-20-2.01	31 Mountain Meadow Drive	13 Mountain Meadow Drive	Brandon	VT	05733
Scott & Sally Rowden	15-20-2.02	70 Mountain Meadow Drive	70 Mountain Meadow Drive	Brandon	VT	05733
Mark Quenneville	15-20-2.03	122 Mountain Meadow Drive	122 Mountain Meadow Drive	Brandon	VT	05733
Douglas & Randall Wiggins	15-20-3	Mountain Meadow	45 Dalrymple Road	Chester	VT	05143
Ryan Breen	15-20-4	1063 North Street	1063 North Street	Brandon	VT	05733
Steven & Nancy Bird	15-20-5	993 North Street	993 North Street	Brandon	VT	05733
Grace Bird	15-20-6.01	North Street	890 North Street	Brandon	VT	05733
Larry Mohan	15-20-6.02	949 North Street	949 North Street	Brandon	VT	05733
Chris & Cathy Bird	15-20-6.03	923 North Street	923 North Street	Brandon	VT	05733
Shaun Lear	15-20-6.04	921 North Street	921 North Street	Brandon	VT	05733
Fred Oberkirch	15-20-7.01	926 North Street	926 North Street	Brandon	VT	05733
Fred Oberkirch	15-20-7.02	946 North Street	926 North Street	Brandon	VT	05733
David Aines	15-20-8	982 North Street	982 North Street	Brandon	VT	05733
David Aines	15-20-9	986 North Street	982 North Street	Brandon	VT	05733
Rachel Chartrand	15-20-10	1028 North Street	1028 North Street	Brandon	VT	05733
Charles Holbrook	15-20-23	732 North Street	732 North Street	Brandon	VT	05733
Darlene Putnam	15-20-24	732 North Street	732 North Street	Brandon	VT	05733
Jerry McCray	15-20-25	640 North Street	640 North Street	Brandon	VT	05733
Peter Bearor	15-20-26	658 North Street	658 North Street	Brandon	VT	05733
Mesa 690 Trust (Daniel Pitner)	15-20-27	690 North Street	18 Union Street	Brandon	VT	05733
George & Judy Disorda	15-20-28	710 North Street	710 North Street	Brandon	VT	05733
New England Woodcraft	15-20-29	732 North Street	PO Box 165	Forest Dale	VT	05745
Isabel & Jeffrey Renfrew	15-20-30	748 North Street	748 North Street	Brandon	VT	05733
Allen & Patricia Ayer	15-20-31	788 North Street	PO Box 142	Forest Dale	VT	05745
Gwendolyn Merrill	15-20-32	818 North Street	818 North Street	Brandon	VT	05733
Aimee Herrick	15-20-33	838 North Street	838 North Street	Brandon	VT	05733
Harold & Linda Russell	15-20-34	860 North Street	860 North Street	Brandon	VT	05733
Eric & Brenda Mallory	15-20-35	884 North Street	884 North Street	Brandon	VT	05733

Grace Bird	15-20-6.01	890 North Street	890 North Street	Brandon	VT	05733
Grace Bird	15-20-6.02	911 North Street	890 North Street	Brandon	VT	05733
Grace Bird	15-20-37	North Street	890 North Street	Brandon	VT	05733
James Sauder	15-20-39	855 North Street	681 Hathaway Road	Goshen	VT	05733
Robert Kalinowski	15-20-40	89 Robin Bird Lane	89 Robin Bird Lane	Brandon	VT	05733
Kristen Harrison	15-20-42	835 North Street	835 North Street	Brandon	VT	05733
Wayne Kingsley	15-20-43	729 North Street	729 North Street	Brandon	VT	05733
Oliver Huntley	15-20-44	651 North Street	651 North Street	Brandon	VT	05733
Wayne Kingsley	15-20-45.1	729 North Street	729 North Street	Brandon	VT	05733
Wayne Kingsley	15-20-45.2	729 North Street	729 North Street	Brandon	VT	05733
Brent Perkins	15-20-45.3	677 North Street	3791 Lake Road	Addison	VT	05491
Martha Wright	15-20-46	623 North Street	623 North Street	Brandon	VT	05733
Ellen Hayes	15-20-47	609 North Street	PO Box 101	Forest Dale	VT	05745
Donna Balthazar	15-20-48	595 North Street	595 North Street	Brandon	VT	05733
Community Ventures, LLC	15-20-49	Conway Terrace	PO Box 435	East Barre	VT	05649
Gary & Lynda Merrill	15-20-50	529 North Street	311 Cahill Road	Rochester	VT	05762
New England Woodcraft	15-20-52	481 North Street	PO Box 165	Forest Dale	VT	05745
New England Woodcraft	15-20-53	449 North Street	PO Box 165	Forest Dale	VT	05745
Deneen LaMoureux	15-20-54	256 Furnace Road	256 Furnace Road	Brandon	VT	05733
Serge Cotnoir	15-20-55	291 Furnace Road	291 Furnace Road	Brandon	VT	05733
Ruth Luther	15-20-56	253 Furnace Road	253 Furnace Road	Brandon	VT	05733
Rodney Luther	15-20-57	241 Furnace Road	PO Box 123	Forest Dale	VT	05745
Michael Gerow	15-20-58	225 Furnace Road	225 Furnace Road	Brandon	VT	05733
Timothy & Billie Ann Scott	15-20-59	240 Furnace Road	27 Cedar Street	Norwood	NY	13668
Timothy Williams	15-20-60	228 Furnace Road	PO Box 170	Forest Dale	VT	05745
Thelma McKeighan-Sunderland	15-20-61	212 Furnace Road	212 Furnace Road	Brandon	VT	05733
Jeffrey & Denise Hayes	15-20-62	196 Furnace Road	2190 Leland Road	Salisbury	VT	05769
Katherine Chandler	15-20-63	180 Furnace Road	PO Box 45	Forest Dale	VT	05745
Bernard & Louis Quesnel	15-20-64	162 Furnace Road	1015 Route 7 N	Middlebury	VT	05753
Dorothy Bird	15-20-65	132 Furnace Road	PO Box 13	Forest Dale	VT	05745
Mark & Wendy Brouilliard	15-20-66	116 Furnace Road	116 Furnace Road	Brandon	VT	05733
Howard & Shirley Bowen	15-20-67	100 Furnace Road	23 Bowen Lane	Benson	VT	05743
David & Laura Kenyon	15-20-68	84 Furnace Road	76 Furnace Road	Brandon	VT	05733
Forest Dale MHP, INC	15-20-69	Bridge Park	101 Tremont Street	Barre	VT	05641
Marcia Butler	15-20-70	317 North Street	PO Box 32	Forest Dale	VT	05745

David & Colleen Mitchell	15-20-71	349 North Street	349 North Street	Brandon	VT	05733
Thomas & Jacqueline Johnson	15-20-72	369 North Street	PO Box 16	Forest Dale	VT	05745
Thomas & Jennifer Hobbs	15-20-73	379 North Street	379 North Street	Brandon	VT	05733
Gabriel McGuigan	15-20-74	13 Prescott Lane	445 Deer Run Road	Brandon	VT	05733
Lawrence Hutchins	15-20-75	448 North Street	448 North Street	Brandon	VT	05733
Jennifer Herrera-Condry	15-20-76	492 North Street	492 North Street	Brandon	VT	05753
Frederick Pockette	15-20-78	518 North Street	518 North Street	Brandon	VT	05733
Corey & Krista Oldroyd	15-20-79	544 North Street	544 North Street	Brandon	VT	05733
Traven Francis	15-20-80	572 North Street	572 North Street	Brandon	VT	05733
Mary Devino	15-20-81	590 North Street	PO Box 67	Forest Dale	VT	05745
New Spring Pond, LLC	15-20-82	North Street	PO Box 165	Forest Dale	VT	05745
Town of Brandon	15-21-1.01	419 Newton Road	49 Center Street	Brandon	VT	05733
Norman LeGault	15-21-1.03	17 Burke Park	14 Corona Street	Brandon	VT	05733
Norman LeGault	15-21-1.02	29 Burke Park	14 Corona Street	Brandon	VT	05733
John & Abby Brodowski	15-21-2	177 Chapel Hill Road	177 Chapel Hill Road	Brandon	VT	05733
Michael Many	15-21-3	175 Chapel Hill Road	2039 Lake Dunmore Road	Leicester	VT	05733
Louise McKeighan	15-21-4	144 Chapel Hill Road	144 Chapel Hill Road	Brandon	VT	05733
Perry Beede	15-21-5	346 North Street	PO Box 2	Forest Dale	VT	05745
Susan Fillioe	15-21-6	388 North Street	PO Box 64	Center Rutland	VT	05736
Nancy Chase	15-21-7	372 North Street	169 Crystal Heights	Bomoseen	VT	05732
Kevin Williams	15-21-9	318 North Street	PO Box 76	Forest Dale	VT	05745
Jerald & Lisa Leedom	15-21-10	290 North Street	PO Box 31	Forest Dale	VT	05745
Jacob & Serena Maxwell	15-21-12	273 Chapel Hill Road	273 Chapel Hill Road	Brandon	VT	05733
Nicholas Audet	15-21-13	191 Newton Road	191 Newton Road	Brandon	VT	05733
Harold Munger	15-21-14	267 Newton Road	267 Newton Road	Brandon	VT	05733
Arthur Dellveneri	15-21-15	291 Newton Road	291 Newton Road	Brandon	VT	05733
Van & Sharon Denton	15-21-16	301 Newton Road	64 Paintworks Road	Brandon	VT	05733
Linda Stone	15-21-17	307 Newton Road	307 Newton Road	Brandon	VT	05733
Damon Moseley	15-21-18	337 Newton Road	337 Newton Road	Brandon	VT	05733
Timothy Kerr	15-21-19	16 Burke Park	16 Burke Park	Brandon	VT	05733
Richard Rochon	15-21-20	389 Newton Road	23253 Wilder Way	Denton	MD	21629
Town of Brandon	15-21-21	397 Newton Road	49 Center Street	Brandon	VT	05733
Joseph & Anita Lao	15-22-1	29 Fox Road	29 Fox Road	Brandon	VT	05733
Justin & Jodi Pelkey	15-22-2	47 Fox Road	47 Fox Road	Brandon	VT	05733
Franklin Sheldrick	15-22-3	67 Fox Road	67 Fox Road	Brandon	VT	05733

Ronald MacKissock	15-22-4	69 Fox Road	69 Fox Road	Brandon	VT	05733
Andrew Lee	15-22-5	99 Fox Road	99 Fox Road	Brandon	VT	05733
Thatcher Resources, LLC	15-22-6	Fox Road	PO Box 400	Gloucester	MA	01931
Kelly Ryan	15-22-8	145 Fox Road	145 Fox Road	Brandon	VT	05733
Laura Bagley	15-22-9	177 Fox Road	177 Fox Road	Brandon	VT	05733
Marie Bradbury	15-22-10	197 Fox Road	197 Fox Road	Brandon	VT	05733
Morgan Peer & Derrick Bilodeau	15-22-11	211 Fox Road	211 Fox Road	Brandon	VT	05733
Geraleen Reed	15-22-12	212 Fox Road	212 Fox Road	Brandon	VT	05733
Gary & Jeanine Griffin	15-22-13	188 Fox Road	188 Fox Road	Brandon	VT	05733
David Atherton	15-22-14	160 Fox Road	160 Fox Road	Brandon	VT	05733
Janet Coolidge	15-22-15	148 Fox Road	148 Fox Road	Brandon	VT	05733
Caroline & Neil Denis	15-22-16	108 Fox Road	108 Fox Road	Brandon	VT	05733
Carolyn Costello	15-22-17	26 Fox Road	26 Fox Road	Brandon	VT	05733
John & Lynne Stokes	15-22-7.01	70 Fox Road	70 Fox Road	Brandon	VT	05733
Steven & Mary Mitchell	15-22-19	16 Chipmunk Lane	16 Chipmunk Lane	Brandon	VT	05733
Brian & Annamae Gero	15-22-20	30 Chipmunk Lane	30 Chipmunk Lane	Brandon	VT	05733
Mike & Karen Wilber	15-22-21	46 Chipmunk Lane	46 Chipmunk Lane	Brandon	VT	05733
Frank & Jaclynne Wooten	15-22-22	45 Chipmunk Lane	45 Chipmunk Lane	Brandon	VT	05733
Stephen & Kay Pelletier	15-22-23	681 Deer Run Road	681 Deer Run Road	Brandon	VT	05733
Gabriel McGuigan	15-22-24	31 Chipmunk Lane	445 Deer Run Road	Brandon	VT	05733
Chad Palmer	15-22-25	182 Deer Run Road	182 Deer Run Road	Brandon	VT	05733
Scott Malbon	15-22-26	651 Deer Run Road	651 Deer Run Road	Brandon	VT	05733
Robert Bordeau	15-22-27	627 Deer Run Road	627 Deer Run Road	Brandon	VT	05733
Ralph French, Jr	15-22-28	601 Deer Run Road	601 Deer Run Road	Brandon	VT	05733
Phillip Letourneau	15-22-29	585 Deer Run Road	585 Deer Run Road	Brandon	VT	05733
Kathleen Murphy	15-22-30	567 Deer Run Road	567 Deer Run Road	Brandon	VT	05733
Vickie Haggas	15-22-31	545 Deer Run Road	545 Deer Run Road	Brandon	VT	05733
Keith Arlund	15-22-32	521 Deer Run Road	521 Deer Run Road	Brandon	VT	05733
Rock Laframboise	15-22-33	509 Deer Run Road	509 Deer Run Road	Brandon	VT	05733
Joel Landesman	15-22-34	471 Deer Run Road	471 Deer Run Road	Brandon	VT	05733
Gabriel McGuigan	15-22-35	445 Deer Run Road	445 Deer Run Road	Brandon	VT	05733
Alicia Owen	15-22-36	694 Deer Run Road	694 Deer Run Road	Brandon	VT	05733
Rita Bilodeau	15-22-37	668 Deer Run Road	668 Deer Run Road	Brandon	VT	05733
Jodie Woodside & Matthew Busko	15-22-38	658 Deer Run Road	658 Deer Run Road	Brandon	VT	05733
Lawrence & Mona Rogers	15-22-39	622 Deer Run Road	622 Deer Run Road	Brandon	VT	05733

Jeffrey Cohen	15-22-40	67 Spring Pond Drive	C/O #297	Montpelier	VT	05601
Shane Quenneville	15-22-41	582 Deer Run Road	582 Deer Run Road	Brandon	VT	05733
Gregory Bailey	15-22-42	528 Deer Run Road	PO Box 226	Forest Dale	VT	05745
Rodney Pulsifer	15-22-43	494 Deer Run Road	494 Deer Run Road	Brandon	VT	05733
Leslie & Brian McIntire	15-22-44	436 Deer Run Road	436 Deer Run Road	Brandon	VT	05733
Russell Ham & Laura Kass	15-22-45	410 Deer Run Road	410 Deer Run Road	Brandon	VT	05733
Brian & Tina Wiles	15-22-46	25 Spring Pond Road	PO Box 137	Forest Dale	VT	05745
Andy & Wanda Zimmerman	15-22-47	358 Deer Run Road	358 Deer Run Road	Brandon	VT	05733
Wallingford P&H	15-22-48	340 Deer Run Road	PO Box 23	Wallingford	VT	05773
Joshua & Bridget Gorham	15-22-49	312 Deer Run Road	312 Deer Run Road	Brandon	VT	05733
John S Hall Jr	15-22-50	298 Deer Run Road	298 Deer Run Road	Brandon	VT	05733
Cheryl Foley	15-22-52	220 Deer Run Road	220 Deer Run Road	Brandon	VT	05733
Desiree Cerretain	15-22-2.01	236 Deer Run Road	236 Deer Run Road	Brandon	VT	05733
Isaiah Patterson	15-22-53	239 Deer Run Road	239 Deer Run Road	Brandon	VT	05733
Christopher Spaulding	15-22-54	267 Deer Run Road	267 Deer Run Road	Brandon	VT	05733
Barry Wilkes	15-22-55	Deer Run Road	20 Cedar Street	Glen Rock	NJ	07452
Paul & Deborah Many	15-22-56	315 Deer Run Road	315 Deer Run Road	Brandon	VT	05733
Teresa Dorr	15-22-57	335 Deer Run Road	335 Deer Run Road	Brandon	VT	05733
Thatcher Resources, LLC	15-22-58	Deer Run Road	PO Box 400	Gloucester	MA	01930
Robert King	15-22-59	375 Deer Run Road	375 Deer Run Road	Brandon	VT	05733
Richard Jamros	15-22-61	54 Spring Pond Road	54 Spring Pond Road	Brandon	VT	05733
Barry Gearwar	15-22-62	76 Spring Pond Road	76 Spring Pond Road	Brandon	VT	05733
Lowell & Kristen Rasmussen	15-22-63	95 Spring Pond Road	95 Spring Pond Road	Brandon	VT	05733
Andrew & Kandace Zuber	15-22-65	102 Spring Pond Road	102 Spring Pond Road	Brandon	VT	05733
Fiddle Hill, Inc	15-22-9.01	Spring Pond Road	191 Alta Woods	Brandon	VT	05733
Thatcher Resources, LLC	15-22-9.02	Spring Pond Road	PO Box 400	Gloucester	MA	01930
Brandon Fire District No 2	15-22-80	253 Deer Run Road	253 Deer Run Road	Brandon	VT	05733
Oscar & Debra Gardner	16-20-1	477 Newton Road	477 Newton Road	Brandon	VT	05733
Town of Brandon	16-20-2	449 Newton Road	49 Center Street	Brandon	VT	05733
Jeffrey Griffin	16-20-3	278 Newton Road	PO Box 133	Forest Dale	VT	05745
John, Warren, William Nop	16-20-4.01	Newton Road	29 Route 7	Salisbury	VT	05769
Michael & Charlotte Frankiewicz	16-20-4.02	250 Newton Road	250 Newton Road	Brandon	VT	05733
Roland Brutkoski	16-20-4.03	316 Newton Road	316 Newton Road	Brandon	VT	05733
Frank & Amy James	16-20-4.04	220 Newton Road	220 Newton Road	Brandon	VT	05733
Birdie Hunters, LLC	16-20-4.05	Newton Road	PO Box 71	Brandon	VT	05733

Rodney Bicknell & Karla Berger	16-20-4.06	2248 Forest Dale Road	PO Box 71	Forest Dale	VT	05745
Brandon Fire District No 1	16-20-5	108 Newton Road	58 Franklin Street	Brandon	VT	05733
Town of Brandon	16-20-6	Newton Road	49 Center Street	Brandon	VT	05733
Town of Brandon	16-20-7	Newton Road	49 Center Street	Brandon	VT	05733
Sarwalstu Corporation	16-20-8	North Street	15 Clark Street	Brooklyn Heights	NY	11201
David Carroll	16-20-9	15 Furnace Road	PO Box 3	Forest Dale	VT	05745
Mark DeCrisantis	16-20-11	22 Middle Road	PO Box 80	Forest Dale	VT	05745
Ryan Machia	16-20-12	46 Schoolhouse Road	46 Schoolhouse Road	Brandon	VT	05733
Joan Fairbanks	16-20-13	Middle Road	111 Bridge Street	Augusta	ME	04330
Schoolhouse, LLC	16-20-14	67 Schoolhouse Road	4961 Case Street	Middlebury	VT	05753
Lucas & Beth Manchester	16-20-15	89 Furnace Road	89 Furnace Road	Brandon	VT	05733
Bradley Gearwar	16-20-16	114 Middle Road	114 Middle Road	Brandon	VT	05733
Jennifer Keeler	16-20-17	140 Middle Road	PO Box 336	Brandon	VT	05733
Gabriel McGuigan	16-20-18	141 Furnace Road	445 Deer Run Road	Brandon	VT	05733
Maurice LaRock	16-20-19	165 Furnace Road	165 Furnace Road	Brandon	VT	05733
Kelly Atwood	16-20-20	183 Furnace Road	183 Furnace Road	Brandon	VT	05733
Lawrence Kopp	16-20-1.01	203 Furnace Road	203 Furnace Road	Brandon	VT	05733
Holly Brileya	16-20-22	2508 Forest Dale Road	2508 Forest Dale Road	Brandon	VT	05733
Brent & Tammy Scarborough	16-20-23	2488 Forest Dale Road	2488 Forest Dale Road	Brandon	VT	05733
Michael McDonough	16-20-24	127 Middle Road	127 Middle Road	Brandon	VT	05733
Lauritz Larsen	16-20-5.01	2454 Forest Dale Road	PO Box 15	Forest Dale	VT	05745
Paul Wood	16-20-5.02	2364 Forest Dale Road	2364 Forest Dale Road	Brandon	VT	05733
Juan Ramos	16-20-26	2332 Forest Dale Road	3 Hale Street	Barre	VT	05641
Douglas Lazarus	16-20-27	2314 Forest Dale Road	2314 Forest Dale Road	Brandon	VT	05733
Thomas & Leslie O'Halloran	16-20-28	2298 Forest Dale Road	2298 Forest Dale Road	Brandon	VT	05733
Carolyn Taylor	16-20-29	21 North Street	21 North Street	Brandon	VT	05733
Paul & Regina Houle	16-20-30	35 North Street	620 Cram Road	Leicester	VT	05733
Charles Lamoureux	16-20-31	49 North Street	49 North Street	Brandon	VT	05733
Dea Kimball	16-20-32	69 North Street	69 North Street	Brandon	VT	05733
Robert Kerr	16-20-33	87 North Street	186 Cram Road	Leicester	VT	05733
William & Meagan Rose	16-20-34	101 North Street	101 North Street	Brandon	VT	05733
William Hodges	16-20-35	119 North Street	119 North Street	Brandon	VT	05733
Stacey Edmunds	16-20-36	133 North Street	133 North Street	Brandon	VT	05733
Linda Markowski	16-20-37	149 North Street	149 North Street	Brandon	VT	05733
Erica Mohan	16-20-38	93 Middle Road	93 Middle Road	Brandon	VT	05733

Joseph Renfrew	16-20-39	21 Middle Road	220 Deer Run Road	Brandon	VT	05733
Forest Dale Holding Partnership	16-20-40	Newton Road	PO Box 119	Forest Dale	VT	05745
Jean Lamarre	16-20-1.01	176 North Street	PO Box 251	Brandon	VT	05733
Brandi Whitney-Backus	16-20-1.02	38 Newton Road	38 Newton Road	Brandon	VT	05733
Jean Pfenning	16-20-42	152 North Street	152 North Street	Brandon	VT	05733
Barbara Whipple	16-20-43	142 North Street	142 North Street	Brandon	VT	05733
Jordan & Catherine Bresette	16-20-44	128 North Street	128 North Street	Brandon	VT	05733
Thomas & Deborah Lloyd	16-20-45	118 North Street	PO Box 93	Forest Dale	VT	05745
Evan & Karen Sherman	16-20-46	104 North Street	104 North Street	Brandon	VT	05733
NNEDC	16-20-47	90 North Street	PO Box 376	Brandon	VT	05733
NNEDC	16-20-48	76 North Street	PO Box 376	Brandon	VT	05733
Jerilyn Langsdon	16-20-49	60 North Street	60 North Street	Brandon	VT	05733
Rodney Bicknell	16-20-50	232 Neshobe Circle	PO Box 71	Forest Dale	VT	05745
OVUUSD	16-20-51	184 Neshobe Circle	49 Court Drive	Brandon	VT	05733
Phillip Hardway	16-20-53	2116 Forest Dale Road	2116 Forest Dale Road	Brandon	VT	05733
Richard & Amy Rogers	16-20-54	2104 Forest Dale Road	2104 Forest Dale Road	Brandon	VT	05733
Olivia's Holdings, LLC	16-20-55	2014 Forest Dale Road	PO Box 183	Forest Dale	VT	05745
Michael Bryant	16-20-56	1964 Forest Dale Road	1964 Forest Dale Road	Brandon	VT	05733
Michael Markowski	16-20-57	1946 Forest Dale Road	1946 Forest Dale Road	Brandon	VT	05733
Justin Edson & Shannon Costello	16-20-58	1920 Forest Dale Road	1920 Forest Dale Road	Brandon	VT	05733
Forest Dale Cemetery Association	16-20-59	Forest Dale Road	1895 Forest Dale Road	Brandon	VT	05733
Edith Bird	16-20-98	North Street	PO Box 54	Forest Dale	VT	05745
David & Karin Butterfield	16-21-1	59 Ray Forrest Road	97 Ray Forrest Road	Brandon	VT	05733
Sylvia Hope	16-21-2	45 Ray Forrest Road	PO Box 152	Forest Dale	VT	05745
Lawrence & Vickie Bresette	16-21-3	33 Ray Forrest Road	33 Ray Forrest Road	Brandon	VT	05733
Todd Thornton	16-21-4	2579 Forest Dale Road	2579 Forest Dale Road	Brandon	VT	05733
Donald & Crescent Remaniak	16-21-5	8 Kennedy Road	7 Lower Plains Road	Middlebury	VT	05753
Shirley Wheeler	16-21-6	126 Kennedy Road	PO Box 31	Forest Dale	VT	05745
Amie Kennedy	16-21-7	Kennedy Road	2716 Hurdle Hill Road	Lynchburg	VA	24503
Jon & Peggy Rishel	16-21-8	41 Kennedy Road	41 Kennedy Road	Brandon	VT	05733
Allan & June Doaner	16-21-9	2443 Forest Dale Road	2443 Forest Dale Road	Brandon	VT	05733
Gregory Sharon	16-21-10	2411 Forest Dale Road	2411 Forest Dale Road	Brandon	VT	05733
Gregory Sharon	16-21-1.01	2365 Forest Dale Road	2411 Forest Dale Road	Brandon	VT	05733
Gregory Sharon	16-21-1.02	Forest Dale Road	2411 Forest Dale Road	Brandon	VT	05733
Gregory Sharon	16-21-1.03	Forest Dale Road	2411 Forest Dale Road	Brandon	VT	05733

John Hoare	16-21-12	2321 Forest Dale Road	2321 Forest Dale Road	Brandon	VT	05733
Clifford Audet	16-21-13	2295 Forest Dale Road	2295 Forest Dale Road	Brandon	VT	05733
TWB Realty, Inc.	16-21-14	2265 Forest Dale Road	11 Peal Street	Proctor	VT	05765
Real & Jean Bergeron	16-21-15	2251 Forest Dale Road	PO Box 114	Forest Dale	VT	05733
Daniel Doaner	16-21-16	2207 Forest Dale Road	2219 Forest Dale Road	Brandon	VT	05733
June Doaner	16-21-17	2219 Forest Dale Road	2443 Forest Dale Road	Brandon	VT	05733
David Fowler	16-21-18	2187 Forest Dale Road	PO Box 388	Brandon	VT	05733
David & Gayle Dushaney	16-21-19	2171 Forest Dale Road	2171 Forest Dale Road	Brandon	VT	05733
Chad & Susan Disorda	16-21-20	2151 Forest Dale Road	2151 Forest Dale Road	Brandon	VT	05733
Marielle Blais	16-21-21	2143 Forest Dale Road	2143 Forest Dale Road	Brandon	VT	05733
Bonnie Nucera	16-21-22	2135 Forest Dale Road	2135 Forest Dale Road	Brandon	VT	05733
Linwood & Karen Larsen	16-21-23	2116 Forest Dale Road	2116 Forest Dale Road	Brandon	VT	05733
Derek Smith & Jennifer Philo	16-21-24	2115 Forest Dale Road	2115 Forest Dale Road	Brandon	VT	05733
Davenport Monument	16-21-25	Forest Dale Road	49 Center Street	Brandon	VT	05733
John & Michelle Capen	16-21-26	2083 Forest Dale Road	2083 Forest Dale Road	Brandon	VT	05733
Jeffrey Smith	16-21-27	1963 Forest Dale Road	1134 Hooker Road	Leicester	VT	05733
Ronald & Susan LaRock	16-21-7.04	342 Basin Road	342 Basin Road	Brandon	VT	05733

LOCAL/STATE MAILING - LIST

- ❖ Town of Brandon
Town Clerk
49 Center Street
Brandon, VT 05733
- ❖ Town of Brandon
Health Officer/Zoning Admin.
49 Center Street
Brandon, VT 05733
- ❖ Town of Brandon
Public Works Superintendent
49 Center Street
Brandon, VT 05733
- ❖ Town of Brandon
Planning Commission
49 Center Street
Brandon, VT 05733
- ❖ Vt DEC Drinking Water &
Groundwater Protection
1 National Life Drive
Montpelier, VT 05602-3521
- ❖ Vt DEC Waste Management and
Prevention Division
1 National Life Drive
Montpelier, VT 05620-3704
- ❖ VAAFM
116 State Street
Montpelier, VT 05602
- ❖ Vt Agency-Transportation
1 National Life Drive
Suite 33
Montpelier, VT 05602
- ❖ Rutland Regional Planning
PO Box 965
67 Merchants Row
Rutland, VT 05701
- ❖ DEC – District # 8
440 Asa Bloomer State Office Bldg
88 Merchants Row
Rutland, VT 05701-5903
- ❖ Dept. of Forest, Parks & Recreation
1 National Life Drive
Montpelier, VT 05602
- ❖ Public Service Department
112 State Street
Suite 3
Montpelier, VT 05620
- ❖ Vermont Department of Health
5 Perry Street
Suite 250
Barre, VT 05641
- ❖ Natural Resources Conservation Council
9 Bailey Avenue
Montpelier, VT 05602
- ❖ Landowners/Responsible Persons
within Source Protection Area
(See Attached List)

Appendix B

Local and State Officials Letter

Landowner/Responsible Person Letter

Dear Town and State Officials:

As a representative of the Brandon Fire District No. 1 water system, I have attached a copy of the source protection area for our water system. As you know, the source protection area defines the land surface, which is believed to contribute drinking water to our public water supply. Therefore, activities, which could release contaminants into the environment within this zone, could threaten our water supply.

Since most of you are involved in making land use decisions at the state and local level, we thought it was very important that you receive a copy of our source protection area as provided to us by the state's Drinking Water & Groundwater Protection Division. As you are aware, we are very concerned about protection the water quality of our source since many people depend upon this water for drinking and other uses. We are not only interested in protecting our source today, but for the future as well. In addition to the source protection area being a useful management and planning tool for you, we would hope that you would keep us informed of any related issues and involve us in the planning and decision process where it is deemed appropriate.

On behalf of the Brandon Fire District No. 1 water system, I want to thank for your attention to this matter. Please contact us at the following telephone number 1-802-247-3311 or email at brandonfdno1@myfairpoint.net if you have any questions of if we can be of any assistance.

Sincerely,

Raymond Counter
Water Superintendent

cc: Town Conservation Commission
Town of Brandon Planning Commission
Town of Brandon Clerk
Town of Brandon Health Officer
Department of Environmental Conservation, Regional Office
District Environmental Commission-Act 250

Dear:

We are working with the Vermont Department of Environmental Conservation's Drinking Water & Groundwater Protection to develop a program to protect our groundwater supply. Groundwater as a drinking water supply source is generally of high quality; however, it is vulnerable to contamination from a wide range of activities that take place on the ground surface. Once the groundwater is contaminated, it is difficult and expensive to clean to a level, which is suitable for drinking.

Because of the high cost associated with groundwater cleanup, we, the Brandon Fire District No. 1 water supply system, are in favor of a program of protection which reduces the risk of contamination of our groundwater resource(s). As part of this effort, we have identified that area of land, which directly contributes recharge to the public water supply source(s) (see attached map). This is known as the source protection area. It is especially important that activities within the source protection area do not discharge contaminants, which may threaten the groundwater that is used for human consumption.

This letter was prepared with the intention of informing you that you have been identified as being located in the source protection area for our water supply system and increase your awareness of this public groundwater resource. Improperly operated on-site septic disposal systems, accidental chemical spills, and residential above ground and underground fuel storage tanks are only a few examples of land use activities which threaten groundwater quality and of which we hope you will share our concern.

We are asking you to do your best to minimize the release of contaminants in the source protection area, which could threaten our groundwater supply. We have information available to help you adopt these preventative practices.

If you have any questions, want further information, or want to discuss this letter or your operating practices, please contact me at 1-802-247-3311 or email at brandonfdno1@myfairpoint.net. I can in turn, with your permission contact the State Department of Environmental Conservation, Drinking Water & Groundwater Protection, or whomever else would best respond to your request.

Sincerely,

Raymond Counter
Water Superintendent
Brandon Fire District No.1

Cc: Public water system Operation & Maintenance manual

Appendix C

Landowner/Responsible Person Public Education Information

POTENTIAL SOURCES OF DRINKING WATER CONTAMINATION INDEX

This chart lists some potential facilities and activities where one might find the contaminants referred to as [primary and secondary drinking water standards](#). The listing of a contaminant does not mean that it will always occur at the associated source, nor does it encompass all contaminants that may be present. Sources are divided into four major categories:

- [Commercial/Industrial](#)
- [Residential Municipal](#)
- [Agricultural/Rural](#)
- [Miscellaneous \(Underground Injection Control/Naturally Occurring\)](#)

POTENTIAL SOURCE	CONTAMINANT
Commercial / Industrial	
Above-ground storage tanks	Arsenic, Barium, Benzene, Cadmium, 1,4-Dichlorobenzene or P-Dichlorobenzene, cis 1,2-Dichloroethylene, trans 1,2-Dichloroethylene, Dichloromethane or Methylene Chloride, Lead, Trichloroethylene (TCE), Tetrachloroethylene or Perchlorethylene (Perc)
Automobile, Body Shops/Repair Shops	Arsenic, Barium, Benzene, Cadmium, Chlorobenzene, Copper, cis 1,2-Dichloroethylene, trans 1,2-Dichloroethylene, 1,4-Dichlorobenzene or P-Dichlorobenzene, Lead, Fluoride, 1,1,1-Trichloroethane or Methyl Chloroform, Dichloromethane or Methylene Chloride, Tetrachloroethylene or Perchlorethylene (Perc), Trichloroethylene (TCE), Xylene (Mixed Isomers)
Boat Repair/Refinishing/Marinas	Benzene, Cadmium, cis 1,2-Dichloroethylene, Coliform, Cryptosporidium, Dichloromethane or Methylene Chloride, <i>Giardia Lamblia</i> , Lead, Mercury, Nitrate, Nitrite, trans 1,2-Dichloroethylene, Tetrachloroethylene or Perchlorethylene (Perc), Trichloroethylene (TCE), Vinyl Chloride, Viruses
Construction/Demolition	Arsenic, Asbestos, Benzene, Cadmium, Chloride, Copper, Cyanide, cis 1,2-Dichloroethylene, trans 1,2-Dichloroethylene, Dichloromethane or Methylene Chloride, Fluorides, Lead, Selenium, Tetrachloroethylene or Perchlorethylene (Perc), 1,1,1-Trichloroethane or Methyl Chloroform, Trichloroethylene (TCE), Turbidity, Xylene (Mixed Isomers), Zinc (Fume or Dust)
Furniture Repair/Manufacturing	Barium, 1,2-Dichloroethane or Ethylene Dichloride, Dichloromethane or Methylene Chloride, Ethylbenzene, Lead, Mercury, Selenium, Trichloroethylene (TCE)
Gas Stations (see also above ground/underground storage tanks, motor-vehicle drainage wells)	cis 1,2-Dichloroethylene, trans 1,2-Dichloroethylene, Dichloromethane or Methylene Chloride, Tetrachloroethylene or Perchlorethylene (Perc), Trichloroethylene (TCE)
Graveyards/Cemeteries	Dalapon, Lindane, Nitrate, Nitrite, Total Coliforms, Viruses.
Historic Waste Dumps/Landfills	Atrazine, Alachlor, Carbofuran, cis 1,2-Dichloroethylene, trans 1,2-Dichloroethylene, Diquat, Dalapon, Glyphosate, Dichloromethane or

	Methylene Chloride, Nitrate, Nitrite, Oxamyl (Vydate), Sulfate, Simazine, Tetrachloroethylene or Perchloroethylene (Perc), Trichloroethylene (TCE)
Mines/Gravel Pits	Lead, Selenium, Sulfate, Tetrachloroethylene or Perchloroethylene (Perc), 1,1,1-Trichloroethane or Methyl Chloroform, Turbidity
Motor Vehicle Waste Disposal Wells (gas stations, repair shops)	Arsenic, Barium, Benzene, Cadmium, Chlorobenzene, Copper, cis 1,2-Dichloroethylene, trans 1,2-Dichloroethylene, 1,4-Dichlorobenzene or P-Dichlorobenzene, Lead, Fluoride, 1,1,1-Trichloroethane or Methyl Chloroform, Dichloromethane or Methylene Chloride, Tetrachloroethylene or Perchloroethylene (Perc), Trichloroethylene (TCE), Xylene (Mixed Isomers)
Synthetic / Plastics Production	Antimony, Arsenic, Barium, Benzene, Cadmium, Carbon Tetrachloride, Chlorobenzene, Copper, Cyanide, 1,2-Dichlorobenzene or O-Dichlorobenzene, 1,4-Dichlorobenzene or P-Dichlorobenzene, 1,2-Dichloroethane or Ethylene Dichloride, cis 1,2-Dichloroethylene, trans 1,2-Dichloroethylene, Dichloromethane or Methylene Chloride, Di(2-ethylhexyl) adipate, Di(2-ethylhexyl) phthlate, Ethylbenzene, Hexachlorobenzene, Lead, Mercury, Methyl Chloroform or 1,1,1-Trichloroethane, Pentachlorophenol, Selenium, Styrene, Tetrachloroethylene or Perchloroethylene (Perc), Toluene, Trichloroethylene (TCE), Vinyl Chloride, Xylene (Mixed Isomers), Zinc (Fume or Dust)
RV/Mini Storage	Arsenic, Barium, Cyanide, 2,4-D, Endrin, Lead, Methoxychlor
Retail Operations	Arsenic, Barium, Benzene, Cadmium, 2,4-D, 1,2-Dichloroethane or Ethylene Dichloride, Lead, Mercury, Styrene, Tetrachloroethylene or Perchloroethylene (Perc), Toluene, 1,1,1-Trichloroethane, Vinyl Chloride
Underground Storage Tanks	Arsenic, Barium, Benzene, Cadmium, 1,4-Dichlorobenzene or P-Dichlorobenzene, cis 1,2-Dichloroethylene, trans 1,2-Dichloroethylene, Dichloromethane or Methylene Chloride, Lead, Tetrachloroethylene or Perchloroethylene (Perc), Trichloroethylene (TCE).
Wood/Pulp/Paper Processing	Arsenic, Barium, Benzene, Cadmium, Carbon Tetrachloride, Copper, Dichloromethane or Methylene Chloride, Dioxin, 1,2-Dichloroethane or Ethylene Dichloride, Methylbenzene, Lead, Mercury, Polychlorinated Biphenyls, Selenium, Styrene, Tetrachloroethylene or Perchloroethylene (Perc), Trichloroethylene (TCE), Toluene, 1,1,1-Trichloroethane or Methyl Chloroform, Xylene (Mixed Isomers)
Residential / Municipal	
Housing developments	Atrazine, Alachlor, Coliform, Cryptosporidium, Carbofuran, Diquat, Dalapon, <i>Giardia Lambia</i> , Glyphosate, Dichloromethane or Methylene Chloride, Nitrate, Nitrite, Picloram, Simazine, Trichloroethylene (TCE), Turbidity, Vinyl Chloride, Viruses
Public Buildings (e.g., schools, town halls, fire stations, police stations) and Civic Organizations	Arsenic, Acryl amide, Barium, Benzene, Beryllium Powder, Cadmium, Carbon Tetrachloride, Chlorobenzene, Cyanide, 2,4-D, 1,2-Dichlorobenzene or O-Dichlorobenzene, 1,4-Dichlorobenzene or P-Dichlorobenzene, Dichloromethane or Methylene Chloride, Di(2-ethylhexyl) phthlate, 1,2-Dichloroethane or Ethylene Dichloride, Endothall, Endrin, 1,2-Dibromoethane or Ethylene Fibroid (EDB), Lead, Lindane, Mercury, Methoxychlor, Selenium, Toluene, 1,1,1-

	Trichloroethane or Methyl Chloroform, Trichloroethylene (TCE), Vinyl Chloride, Xylene (Mixed Isomers)
Septic Systems	Atrazine, Alachlor, Carbofuran, Coliform, Cryptosporidium, Diquat, Dalapon, <i>Giardia Lambia</i> , Glyphosate, Nitrate, Nitrite, Oxamyl (Vydate), Picloram, Sulfate, Simazine, Vinyl Chloride, Viruses
Sewer Lines	Coliform, Cryptosporidium, Diquat, Dalapon, <i>Giardia Lambia</i> , Glyphosate, Nitrate, Nitrite, Oxamyl (Vydate), Picloram, Sulfate, Simazine, Vinyl Chloride, Viruses
Stormwater infiltration basins/injection into wells (UIC Class V), runoff zones	Atrazine, Alachlor, Coliform, Cryptosporidium, Carbofuran, Chlorine, Diquat, Dalapon, <i>Giardia Lambia</i> , Glyphosate, Dichloromethane or Methylene Chloride, Nitrate, Nitrite, Nitrosamine, Oxamyl (Vydate), Phosphates, Picloram, Simazine, Trichloroethylene(TCE), Turbidity, Vinyl Chloride, Viruses
Transportation Corridors (e.g., Roads, railroads)	Dalapon, Picloram, Simazine, Sodium, Sodium Chloride, Turbidity
Agricultural / Rural	
Crops	Benzene, 2,4-D, Dalapon, Dinoseb, Diquat, Glyphosate, Lindane, Lead, Nitrate, Nitrite, Picloram, Simazine, Turbidity
Dairy operations	Coliform, Cryptosporidium, <i>Giardia Lambia</i> , Nitrate , Nitrite,Sulfate,Turbidity, Viruses
Lagoons, liquid waste disposal	Atrazine, Alachlor, Coliform, Cryptosporidium, Carbofuran, Diquat, Dalapon, <i>Giardia Lambia</i> , Glyphosate, Nitrate, Nitrite, Oxamyl (Vydate), Picloram,Sulfate,Simazine, Vinyl Chloride, Viruses
Managed Forests/Grass Lands	Atrazine, Diquat, Glyphosate, Picloram, Simazine, Turbidity
Grazing lands	Coliform, Cryptosporidium, <i>Giardia Lambia</i> , Nitrate, Nitrite, Sulfate, Turbidity, Viruses
MISCELLANEOUS SOURCES	
Abandoned drinking water wells (conduits for contamination)	Atrazine, Alachlor, Coliform, Cryptosporidium, Carbofuran, Diquat, Dalapon, <i>Giardia Lambia</i> , Glyphosate, Dichloromethane or Methylene Chloride, Nitrate, Nitrite, Oxamyl (Vydate), Picloram, Simazine, Trichloroethylene (TCE), Turbidity, Vinyl Chloride, Viruses
Naturally Occurring	Arsenic, Asbestos, Barium, Cadmium, Chromium, Coliform, Copper, Cryptosporidium, Fluoride, <i>Giardia Lambia</i> , Iron, Lead, Manganese, Mercury, Nitrate, Nitrite, Radionuclides, Selenium, Silver, Sulfate, Viruses, Zinc (Fume or Dust)

POTENTIALLY HARMFUL COMPONENTS OF COMMON HOUSEHOLD PRODUCTS

Product

Antifreeze (gasoline or coolant systems)
 Automatic transmission fluid
 Battery acid (Electrolyte)
 Degreasers for driveways and garages
 Degreasers for engines and metal

Engine and radiator flushes
 Hydraulic fluid (brake fluid)
 Motor oils; and waste oils
 Gasoline and jet fuel
 Diesel fuel, kerosene, #2 heating oil
 Grease, lubes
 Rust proofers
 Car wash detergents
 Car waxes and polishes
 Asphalt and roofing tar
 Paints, varnishes, stains, dyes
 Paint and lacquer thinner

Paint and varnish removers, deglossers

Paint brush cleaners

Floor and furniture strippers
 Metal polishes
 Laundry soil and stain removers
 Spot removers arid dry cleaning fluid

Other solvents
 Rock salt (Halite)
 Refrigerants
 Bug and tar removers
 Household cleansers, oven cleaners
 Drain cleaners
 Toilet cleaners
 Cesspool cleaners

Disinfectants
 Pesticides (all types)

Photo chemicals

Printing ink
 Wood preservatives (creosote)
 Swimming pool chlorine
 Lye or caustic soda
 Jewelry cleaners

Toxic or Hazardous Components

methanol, ethylene glycol
 petroleum distillates, xylene
 sulfuric acid petroleum solvents, alcohols, glycol ether
 chlorinated hydrocarbons, toluene, phenols, dichloroperchloroethylene
 petroleum solvents, ketones, butanol, glycol ether
 hydrocarbons, fluorocarbons
 hydrocarbons
 hydrocarbons
 hydrocarbons
 hydrocarbons
 phenols, heavy metals
 alkyl benzene sulfonates
 petroleum distillates, hydrocarbons
 hydrocarbons
 heavy metals, toluene
 acetone, benzene, toluene, butyl, acetate, methyl ketones
 methylene chloride, toluene, acetone, xylene, ethanol, benzene, methanol
 hydrocarbons, toluene, acetone, methanol, glycol ethers, methyl ethyl ketones
 xylene
 petroleum distillates, isopropanol, petroleum naphtha
 petroleum distillates, tetrachloroethylene
 hydrocarbons, benzene, trichloroethylene, 1, 1, 1 trichloroethane
 acetone, benzene
 sodium concentration
 1, 1, 2 trichloro - 1, 2, 2 trifluoroethane
 xylene, petroleum distillates
 xylenols, glycol ethers, isopropanol
 1, 1, 1 trichloroethane
 xylene, sulfonates, chlorinated phenols
 tetrachloroethylene, dichlorobenzene, methylene chloride
 cresol, xylenols
 naphthalene, phosphorus, xylene, chloroform, heavy metals, chlorinated hydrocarbons
 phenols, sodium sulfite, cyanine, silver halide, potassium bromide
 heavy metals, phenol-formaldehyde
 pentachlorophenol
 sodium hypochlorite sodium hydroxide
 sodium cyanide

How was the Source Water Protection Plan Prepared?

1. Land area to be managed was identified.
2. Land uses and possible sources of pollution in the wellhead protection areas were identified and the wellhead protection areas vulnerability to pollution was assessed.
3. Management activities were identified.
4. A Contingency plan was developed for emergency purposes.

What can you do?

To help implement the plan:

- Serve on work groups
- Attend wellhead protection meetings
- Help identify land uses and possible sources of contamination on your property

To protect local groundwater:

- Recognize and manage possible sources of contamination on your property
- Use hazardous products as directed and dispose of them properly
- Conserve water

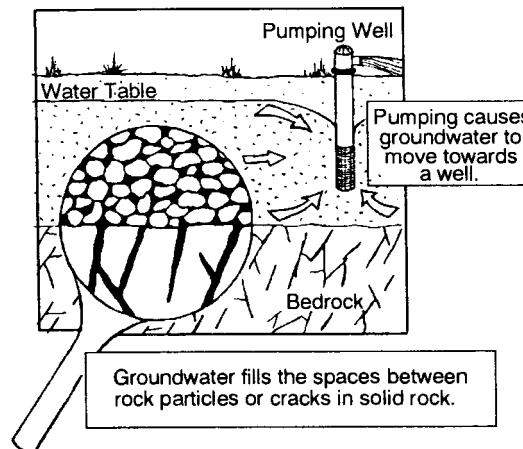
What is Groundwater?

Groundwater is the water that fills the small spaces between rock particles (sand, gravel, etc.) or cracks in solid rock. Rain, melting snow, or surface water becomes groundwater by seeping into the ground and filling these spaces. The top of the water-saturated zone is called the “water table”.

When water seeps in from the surface and reaches the water table, it begins moving towards points where it can escape, such as wells, rivers, or lakes.

An **aquifer** is any type of geologic material, such as sand or sandstone, which can supply water to wells or springs.

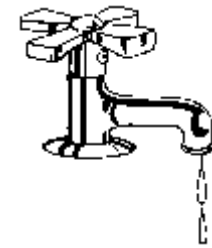
The groundwater which supplies wells often comes from within a short distance (a few miles) of the well. How fast groundwater moves depends on how much the well is pumped and what type of rock particles or bedrock it is moving through.



Where Does Your

**DRINKING
WATER**

Come From?



The Brandon Fire District

has developed a

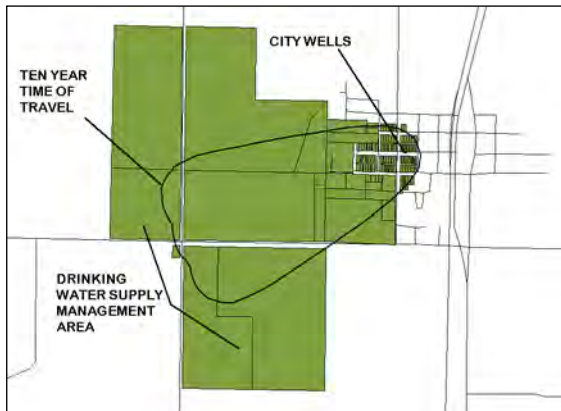
SOURCE WATER PROTECTION PLAN

Raymond Counter
Water Superintendent, Brandon Fire District No 1
Tel # 802-247-3311

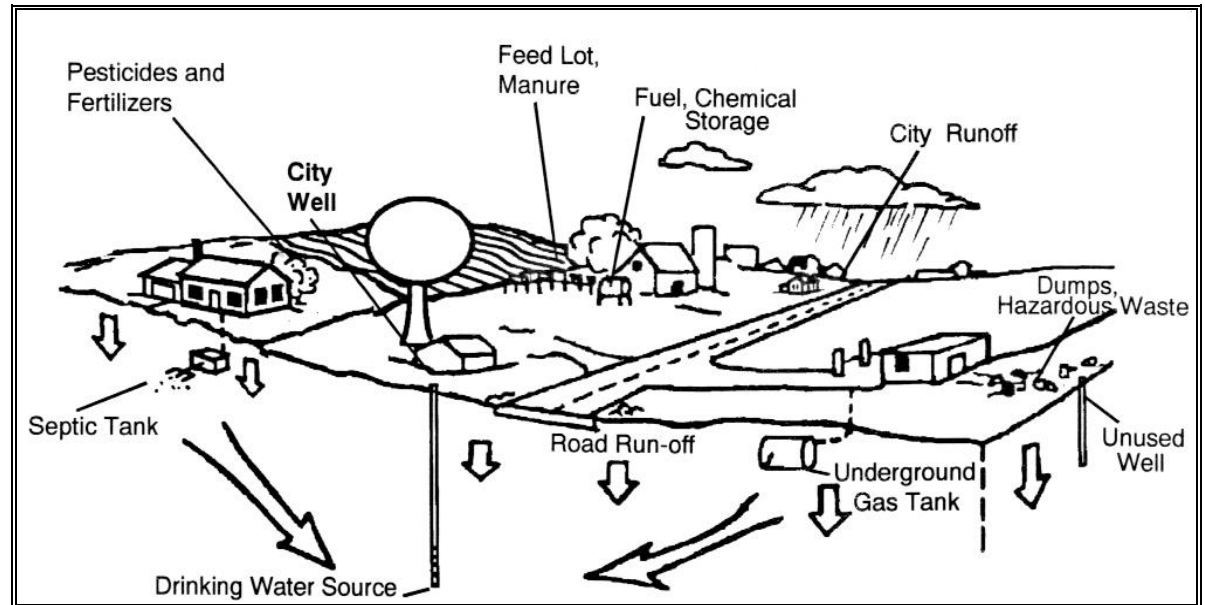
brandonfdno1@myfairpoint.net

A community effort to Protect public wells

The residents of Brandon, VT rely on groundwater for their drinking water supply. Brandon is served by a combination of drinking water systems and private wells. These wells draw water from groundwater aquifers located several hundred feet underground. Groundwater aquifers are vulnerable to contamination from human land surface activities.



Contact (802) 247-3311 for additional information



Examples of Source Water Contamination

Most People in Vermont get drinking water from wells

*Source Water Protection is a way to prevent drinking water from becoming polluted by managing possible sources of contamination in the area which supplies water to a public well. Source Water Protection will be an ongoing need for communities. Everyone has an important part to play in protecting drinking water wells - today and for the future. **Become involved in protecting your drinking water source.***

Why do wells sometimes become polluted?

Wells become polluted when substances that are harmful to human health get into the groundwater. Water from these wells can be dangerous to drink when the level of pollution rises above health standards. Many of our everyday activities can cause pollution. Much can be done to prevent pollution, such as wise use of land and chemicals. The expense of treating polluted water or drilling new wells can also be avoided. Help avoid drinking water contamination by being an environmentally aware citizen.

Appendix D

Resources

The following is a list of resources that were used in the development of the
Source Protection Plan.

- ❖ Protecting Public Water Sources in Vermont
Agency of Natural Resources
DEC – Drinking Water & Groundwater Protection Division
- ❖ An Ounce of Prevention
A Ground Water Protection Handbook for Local Officials
Agency of Natural Resources
DEC – Drinking Water & Groundwater Protection Division
- ❖ Vermont Water Supply Rule
Agency of Natural Resources
DEC – Drinking Water & Groundwater Protection Division
- ❖ Town of Brandon
Zoning and Land Use Files
- ❖ Rutland Regional Planning Commission
Maps – GIS
- ❖ Vermont Drinking Water & Groundwater Protection Division Files
- ❖ Vermont Waste Management Division Files
- ❖ Brandon Town Plan
- ❖ Brandon Land Use Ordinance
- ❖ Brandon Fire District No.1 Files
- ❖ Local Citizen’s Knowledge

Appendix E

Plans, Ordinances and Petitions



BLUO-Amended-Aug-27-2018.pdf

Copy of Brandon Land Use Ordinance



ClassIIGroundwaterPetition2011.pdf

BFD #1 Class II Groundwater Petition



ClassIIGroundwaterPetitionAddendum.pdf

BFD #1 Addendum to Class II Petition



BrandonReclassificationonClass2.pdf

Findings of Fact and Reclassification Order



BFDNo2SPP.pdf

Copy of BFD #2 Source Protection Plan



Neshobe_River_CorridorPlan_final_09_12_11

Neshobe River Corridor Plan

Appendix F

Proposal to Investigate Overburden Aquifers

**Investigation of Hydraulic Connection Between the Neshobe
River and Brandon Fire District No 1 Wells**

Report on Investigation of the McConnell Road Aquifer

**Proposal to Investigate Overburden Aquifers
Brandon, VT
Vermont Geological Survey - 8/10/06**

Introduction: The Vermont Geological Survey (VGS) presented draft maps, cross sections and an executive summary of a 2005-2006 investigation into the surficial geology and hydrogeology of the Town of Brandon. The discussions which followed a 14 June 2006 presentation resulted in this proposed plan to study in detail the hydrology of the Town's primary Spring Pond aquifer and the relationship of the Neshobe River to this aquifer. In addition, it is proposed that the McConnell Road aquifer area be investigated to discern its viability as a future public water resource. This draft proposal presents a scope of work and the methods to be used to accomplish the goals of this investigation. The primary aim is to improve knowledge of the possible interaction between the Neshobe River and the Spring Pond aquifer. In addition, it is hoped that the data generated can be combined with existing knowledge of the Spring Pond aquifer to address questions raised during discussions with representatives of the Town of Brandon about the sustainable yield of the entire aquifer. However, it is beyond the budgetary scope of this study to quantify the sustainable yield of the entire Spring Pond aquifer as drilling and pump test costs accompanied by labor would be prohibitive.

Goals: These are the goals of the proposed investigation:

1. Neshobe River and Spring Pond aquifer evaluation: Assess the hydraulic properties of the Spring Pond aquifer in order to determine where to site a future public water supply well. Evaluate the Spring Pond overburden aquifer and assess the relationship of the Neshobe River to this aquifer which is tapped by 4 public water supply wells.

2. McConnell Road aquifer examination: Evaluate the McConnell Road overburden aquifer to better delineate the stratigraphy of overburden and assess its potential as a viable water supply aquifer.

3. Spring Pond aquifer hydraulic properties: Devise some method to estimate the safe yield for the entire Spring Pond aquifer.

Methods: To accomplish these goals, a plan of work that combines multiple methods to assess the overburden stratigraphy for both aquifers is proposed. The key to successfully and efficiently accomplish these goals is to be flexible in the use of surface and subsurface methods, to effectively assess the results of one phase of the study, and to use the results of the work to date to refine a conceptual model of the aquifer and move forward to the next phase of the investigation. The approach makes the best use of available resources to efficiently and successfully evaluate the sites under study.

The VGS recently completed a study of available surface and subsurface data which represents an initial conceptual model of each aquifer to direct available resources to generate new data using several surface methods.

1. Neshobe River and Spring Pond aquifer evaluation: The Spring Pond aquifer is already tapped by 4 public water supply wells and is known to be capable of yielding suitable amounts of water. A better determination of the 3-dimensional nature

of the aquifer and the degree of variation in sediment texture is necessary to evaluate the complete aquifer. If discernible, areas of thickest gravel and sand and less finer grained silt and clay will be delineated. Using the analogy from discussions with Town representatives, VGS will attempt to trace in the subsurface where the “fire hose spray” of gravel and sand was directed during sediment deposition. With the best possible conceptual model of the aquifer, VGS will identify the best site(s) for a future public water supply well. It is critical to this research that the relationship of the Neshobe River to this aquifer becomes better understood. Are there reaches of the river where recharge of the underlying aquifer is occurring by leakage of water through the riverbed? Is induced recharge of the aquifer occurring during pumping of the Town public water supply well?

Neshobe River – aquifer interaction study: This research will be conducted to investigate the nature of the interaction between the Neshobe River and the aquifer. The aim is to identify reaches of the river where it may naturally be a losing stream, leaking water through its bed to recharge the overburden aquifer. In addition, data will be collected to identify whether pumping of Town well #002 causes induced recharge of the aquifer from the river. To address this complex surface and ground water issue, it is necessary to understand the seasonal and precipitation driven changes in the aquifer, the water table, and the river. This will be done by monitoring river discharge, water table changes in observation wells, and precipitation.

Stream gauging stations need to be established at the following locations in order to monitor the river:

1. The Neshobe River at the 620ft elevation approximately 1700ft east of Rte 53.
2. The Neshobe River at the 560ft elevation just east of Rte 53.
3. The Neshobe River at the 500ft elevation.
4. The Neshobe River just above the junction with the outlet of Spring Pond.
5. The outlet of Spring Pond just above the junction with Neshobe River.
6. The Neshobe River just above the junction with the outlet of Burnell Pond.
7. The outlet of Burnell Pond just above the junction with Neshobe River.
8. The Neshobe River at a site approximately 1500ft downstream of the sites for Gauges #6 and 7.

Stream gauges at these locations are necessary to achieve the stated goals. Measurement of discharge variations between gauges #1 and 2 will yield data on the possible loss of water from Neshobe River as it exits the uplands and initially flows on the valley floor. This reach of the river is along the break from a steep upland gradient to a gentle lowland gradient. The remaining 6 gauges will yield data on the nature of 3 critical reaches of Neshobe River that are the reaches most likely to be affected by pumping of Town well #2.

Each stream gauge will continuously monitor discharge using electronic means via a pressure transducer. A cross channel profile will be made at the location of each gauging station and a staff gauge will be established as a manual method to monitor river level.

A continuous record of pumping of Town well #002 needs to be compared to stream discharge data. Our proposal assumes that the Town is already monitoring pumping and maintaining records of pumping time on/off and pumping rates.

This proposal assumes the existence of monitoring wells that remain accessible surrounding the Town's primary pumping well. Existing observation wells surrounding this pumping well will be monitored for changes in the water table elevation due to pumping, barometric pressure changes, precipitation and seasonal conditions. It will be most effective to continuously monitor changes in the water table by fitting selected observation wells with piezometers or transducers.

A precipitation gauge will be installed at the site of the pumping well. This gauge will be a self-tipping rain gauge that will also log precipitation so that it can be downloaded and compared with our other data. A barometric pressure data logging instrument will be necessary to monitor changes in atmospheric pressure which will affect the elevation of the water table and need to be accounted for in the analysis of stream and well data.

All of the stream gauges, well level recording devices, precipitation gauge and pumping records must be maintained and monitored for a long period of time. This period of time must encompass the typical dry and low flow river season in mid to late summer. It should also include numerous precipitation events to see the response of the entire surface and ground water system to these changes in input. Ideally, monitoring should continue for a full year in order to determine seasonal trends in river and water table elevations.

Water table maps and water level change maps will be prepared to demonstrate ground water flow directions to Town well #002 during pumping and non-pumping conditions. These maps and cross sections displaying ground water flow to the well will aid in understanding the relationship of the well and river during pumping and non-pumping conditions.

Comparison of the data collected on stream discharge, well levels, precipitation and pumping will be analyzed to determine the existence of losing reaches of the Neshobe River and the existence and extent of induced recharge that may be occurring due to pumping.

Spring Pond aquifer study: The current conceptual model of this aquifer will enable the selection of 3-4 lines to conduct surveys using surface geophysical methods in order to assess the physical nature of the subsurface materials.

The seismic refraction method measures the travel times of multiple sound waves as the waves travel along an interface or boundary between materials with different acoustic velocities. Refraction seismic techniques employ an impact device such as a sledge hammer or a small explosive charge to generate sound waves in the subsurface. Refracted waves are created when the penetrating sound waves encounter a boundary between layers with different seismic velocities such as clay or hardpan versus gravel or sand. The refracted waves travel to the surface and are recorded by an array of receivers called geophones. The travel time of the refracted waves is dependent upon the composition/density of the subsurface materials. Seismic refraction will resolve the difference between clay or hardpan versus gravel or sand materials. Existing well data indicates the depth to rock may be approximately 200ft. To resolve materials down to this depth, geophone receivers must be placed along a line 5 times this depth or at least 1000ft long. This will add to the time and expense of the seismic survey. However, the seismic

refraction method is only a moderately expensive technique and should produce a stratigraphic profile of the subsurface with a resolution of +/- 5ft.

The data from these seismic surveys will enable revision of the conceptual model of the aquifer. VGS will then select 1 site for drilling. Drilling through overburden materials that contain extensive gravel, sand, boulders and clay is best done using down-hole casing advance drilling techniques. Down-hole casing advance allows for rapid drilling in these difficult materials, enables easy identification of the water table since no drilling fluids are used and provides a continuous sample of drilled materials so that changes in sediment texture can be logged at an accurate depth of drilling. Prior VGS experience with this method in the Town of Manchester makes this approach appealing for the cost effectiveness, rapid drilling and the capability to record a continuous log of the drilled sediment by the on-site geologist. This is the only drilling technique that satisfies the budgetary and scientific parameters of the project.

The result of drilling will enable refinement of the conceptual model of the aquifer. This final conceptual model will be used to identify the best site(s) for a future public water supply well in the Spring Pond aquifer. The drilling site may be the optimal site for a future public water supply well. However, it is not within the scope of this proposed research to install monitoring wells around the test drilling well nor is it proposed to perform a pumping test on the newly drilled test well.

2 McConnell Road evaluation: This investigation will follow the same steps described in the aquifer study section for the Spring Pond aquifer. Using an existing conceptual model of the McConnell Road aquifer, VGS will select 3-4 survey lines and conduct seismic refraction surveys. The survey results will produce a revised conceptual model of the aquifer and indicate the best site to further investigate the heterogeneous nature of the overburden stratigraphy by drilling 1 test well using the techniques described above for the Spring Pond aquifer investigation. The results of this drilling will be used to determine the potential of the McConnell Road aquifer as a possible public water supply aquifer.

3. Hydraulic properties of the Spring Pond aquifer: Considerable empirical work has established the relationships between grain size, porosity, degree of sorting, and specific yield for unconsolidated aquifers (Cohen, 1963, Conkling et al, 1934, Davis et al, 1959, Johnson et al, 1963, Piper et al, 1939). Figures illustrating these relationships are produced below and were copied from Brassington (1988).

Porosity of the sediment refers to the volume of pore space in the sediment expressed as a percent of the total volume of the sediment. Ground water occupies the pore spaces in the overburden sediment.

Table 5.1 Indicative values of porosity for a range of geological materials. Compare with Table 5.2

<i>Material</i>	<i>Porosity (per cent)</i>	<i>Material</i>	<i>Porosity (per cent)</i>
Coarse gravel	28	Loess	49
Medium gravel	32	Peat	92
Fine gravel	34	Schist	38
Coarse sand	39	Siltstone	35
Medium sand	39	Claystone	43
Fine sand	43	Shale	6
Silt	46	Till – mainly sand	31
Fine-grained sandstone	33	Till – mainly silt	34
Clay	42	Tuff	41
Medium-grained sandstone	37	Basalt	17
Limestone	30	Gabbro (weathered)	43
Dolomite	26	Granite (weathered)	45
Dune sand	45		

(Adapted from Water Supply Paper 1839-D by permission of the United States Geological Survey).

It is valuable to determine the specific yield of an aquifer, a measure of how much water can be withdrawn from the aquifer under the influence of gravity, a condition true for unconfined overburden aquifers.

Table 5.2 Indicative values of specific yield for a range of geological materials

<i>Material</i>	<i>Specific yield per cent</i>
Coarse gravel	23
Medium gravel	24
Fine gravel	25
Coarse sand	27
Medium sand	28
Fine sand	23
Silt	8
Clay	3
Fine-grained sandstone	21
Medium-grained sandstone	27
Limestone	14
Dune sand	38
Loess	18
Peat	44
Schist	26
Siltstone	12
Till (mainly silt)	6
Till (mainly sand)	16
Till (mainly gravel)	16
Tuff	21

(Adapted from Water Supply Paper 1662-D by permission of the United States Geological Survey).

Some field or laboratory determination of the grain size distribution of the sediments comprising one or both of the study aquifers will be necessary. An adequate volume of sediment representative of the layers of the aquifer cannot be obtained through surface or subsurface sampling. However, continuous logging of the overburden during drilling with the casing advance method will result in a detailed stratigraphic log of the drilled test well. It will also enable a field assessment of the grain size and degree of sorting in the aquifer materials. These data, combined with descriptions from drillers' logs, especially in those logs from the Town wells that were likely logged by a geologist, should be adequate to estimate specific yield.

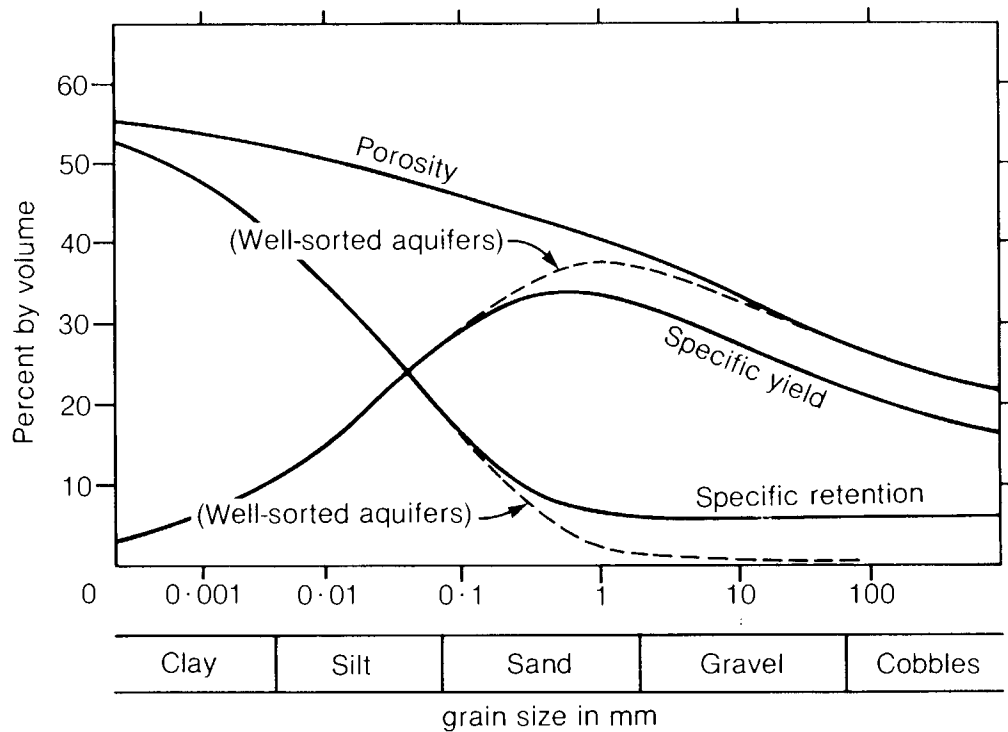


Fig. 5.4 The relationship between porosity, specific yield, specific retention and grain size for unconsolidated sediments only. The lines on this graph are best-fit curves drawn through scattered points and you should not ascribe any degree of precision to them.

<i>Particle size</i>	<i>Assumed proportion of sample (%)</i>	<i>Typical specific yield (%)</i>	<i>Estimated specific yield (%)</i>
Clay/silt	10	10	1.0
Fine sand	15	25	3.75
Medium/coarse sand	45	30	13.5
Fine/medium gravel	30	25	7.5
TOTAL			25.75

From total specific yield estimated as 20%

Fig. 5.5 In this example, the specific yield of an unconsolidated aquifer has been estimated using the grain-size distribution from a sieve analysis and estimated typical values for specific yield taken from Fig. 5.4. Each particle size is assumed to contribute to the overall specific yield of the aquifer in the same proportion as its volume. The components are summed and the estimated specific yield rounded down from this total. It must be stressed that this is a first-order estimate only, and the results should be treated with caution.

The saturated thickness of the aquifer can be determined from the conceptual model. Surficial geologic mapping (De Simone 2006) has determined the aerial extent of the aquifer and the depth to bedrock has been determined from existing well logs. Thus, there are data to determine the total volume of the aquifer and the percent volume of different sediment textures may be calculated using stratigraphic data.

The hydraulic conductivity of the aquifer, K , is a property with a wide range of variation and is difficult to determine without a pumping test. Pumping tests are expensive and require the drilling of an array of observation wells around the pumping well. Observation wells are necessary to define the extent of the cone of depression around the pumping well. It will not be within the budgetary constraints of the project to drill observation wells around the wells drilled in either aquifer.

However, pumping tests have already been done for several of the Town's wells which tap the Spring Pond aquifer. It may be possible to use the results of these pumping tests and the values of hydraulic conductivity determined from these tests and combine them in some as yet undefined way to extrapolate the values of hydraulic properties for the Spring Pond aquifer as a whole. This process may shed light on whether an additional public water supply well can be drilled into the Spring Pond aquifer and not exceed the unknown sustainable yield of the entire aquifer.

Hydraulic conductivity is a measure of how readily water flows through the aquifer. It is defined as the volume of water that flows through a unit cross sectional area of the aquifer in a unit time under a unit hydraulic gradient. The units of K are those of velocity and are typically expressed as feet/day or meters/day. This is the property of the aquifer that normally requires pumping to determine. However, Olney (1983) developed a model which allows for K to be calculated if the particle size distribution of the sediment is known. The USGS (1994) has prepared and successfully used a table of K values calculated by Olney and positively correlated through testing to grain size distribution.

Values of K can then be used to calculate the transmissivity, T , a measure of the hydraulic conductivity multiplied by the saturated thickness of the aquifer, b .

$$T = Kb$$

Thus, if VGS can generate meaningful values for the grain size distribution of the Spring Pond aquifer, these values can determine the specific yield, hydraulic conductivity, and transmissivity of the aquifer. VGS may be able to accomplish this using the data from this investigation and the existing data from pumping tests. VGS proposes to use the expertise of the consultants to the Town who performed the pumping test(s) and calculations by partnering with them for this study to determine the hydraulic properties of the aquifer(s). It will not be possible within the budgetary constraints of this research to quantify the sustainable yield of the entire Spring Pond aquifer. This value can best be determined by numerous pumping tests on wells located in many sites within the aquifer. There is no substitute for the data that may be collected during these pumping tests. However, the drilling costs for multiple wells and surrounding monitoring wells is prohibitive. Therefore, VGS proposes to make best use of new data and existing data to make a qualitative assessment of whether another public supply well in the Spring Pond aquifer is feasible and would not result in depletion of the aquifer due to ground water over draught.

References:

1. Brassington, R., 1988, Field Hydrogeology: Geological Society of London, Professional Handbook Series.
2. Cohen, P., 1963, Specific yield and particle size relations of Quaternary alluvium, Humboldt River valley, Nevada: USGS Water Supply Paper 1669-M.
3. Conkling, H., et al, 1934, Ventura County investigation: CA Division of Water Resources Bulletin 6.
4. Davis, G.H., et al, 1959, Ground water conditions and storage capacity in the San Joaquin valley, CA: USGS Water Supply Paper 1469.
5. De Simone, D.J., 2006, The surficial geology and hydrogeology of Brandon, VT: Vermont Geological Survey open file report and maps.
6. Johnson, A.I., et al, 1963, Specific yield – column drainage and centrifuge moisture content: USGS Water Supply Paper 1662-A.
7. Moore, R.B. ,et al, 1994, Geohydrology and water quality of stratified drift aquifers in the lower CT River basin, SW New Hampshire: USGS Water Resources Investigations Report 92-4013.
8. Olney, S.L., 1983, An investigation of the relationship between the coefficient of permeability and effective grain size of unconsolidated sands: Boston University Master's thesis.
9. Piper, A.M., et al, 1939, Geology and ground water hydrology of the Mokelumne area, CA: USGS Water Supply Paper 780.

Projected Costs: - Labor costs are for a geologist and a temporary technician geologist in State employ. The hourly rate includes indirect charges to DEC.
Geologist - \$36.00/hour
Technician geologist- \$24.00/hour

For most line items two workers are needed so the hourly rate is averaged at \$30.00
Work that will primarily fall to the geologist is calculated at \$36.00/hr
Brandon's consultant hourly rate is not know and should be substituted for hours where Brandon would like its hydrogeologic consultant to be involved.

	Labor Hours	Labor Total	Unit Cost	Total
Neshobe River stream gauges:				
8 Solinst Gold Leveloggers			\$600	\$4800
1 Solinst Gold Leveloader with Direct Read software and 50ft cable			\$744	\$744
PVC or steel pipe to house gauges in river				\$350
9 Staff gauges, 5 ft length (one is back-up)			\$42	\$378
Labor to profile river at each gauge site 4 hrs X 8 sites X 2 persons	64	\$1,920		
Labor to install gauges 6 hrs X 8 sites X 2 persons	96	\$2,880		
Labor to monitor gauges and download data weekly for 52 wks 6 hrs/week includes travel time	312	\$9,360		
Monitoring well gauges:				
6 Solinst Gold Leveloggers			\$600	\$3600
Labor to install leveloggers 4 hrs X 6 sites X 2 persons	48	\$1,440		
Labor to monitor gauges and download data for 52 weeks 2 hrs/week	104	\$3,120		
Precipitation gauge:				
1 Onset Data Logging Rain Gauge with software			\$494	\$494
Labor to install rain gauge	2	\$60		
Labor to monitor gauge and download data for 52 weeks, 0.5 hrs/wk	26	\$780		
Barometric pressure gauge:				
1 Solinst Barologger			\$487	\$487
Labor to install gauge 2hr X 2 persons	4	\$120		

Spring Pond seismic surveys:

Seismic refraction equipment, rental estimate			\$500
Labor to conduct 4 seismic surveys in Spring Pond area, 4 hrs/survey X 2 persons X 4 surveys	32	\$960	
Labor to analyze data, 8 hrs/survey X 4 surveys	32	\$960	

Spring Pond drilling estimates: Costs are per borehole.

Spring Pond area, estimated depth is 200ft.

Labor to prep and clean up drill site	8	\$240	
Drilling cost using down-hole casing advance method, includes casing		\$26/ft	\$5200
Mobilization of drill rig		\$250/hr	\$625
Labor to log well by geologist, 3 days onsite with drill rig plus travel time	\$36/hr - 36	\$1,296	

McConnell Road aquifer seismic surveys:

Labor to conduct 4 seismic surveys in McConnell Road area, 4 hrs/survey X 2 persons X 4 surveys	32	\$960	
Labor to analyze data, 8 hrs/survey X 4 surveys	32	\$960	

McConnell Road drilling estimates: Costs are per borehole.

McConnell Road area, estimated depth is 220ft.

Labor to prep and clean up site	8	\$240	
Drilling cost using down-hole casing advance method, includes casing		\$26/ft	\$5720
Mobilization of rig		\$250/hr	\$625
Labor to log well by geologist, 3 days onsite with drill rig plus travel time	\$36/hr - 36	\$1,296	

Analyses and interpretation of data and preparation of report:

Labor estimate includes qualitative assessment of yield for entire Spring Pond aquifer, \$36/hr - 200		\$7,200	
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	1072		Subtotal	\$23,523
Labor				\$33,792
Travel				\$2,100
			Total	\$59,415

Budget breakdown by project

Neshobe River – aquifer interaction study:

Equipment	\$10,853
Labor, not with analyses and report prep..656 hrs -	\$19,680
Labor for analyses and report prep.....80 hrs -	\$2,880
Travel.....	\$1,400
Total.....	\$34,813

Spring Pond aquifer study:

Equipment and drilling.....	\$6,325
Labor, not with analyses and report prep....108 hrs -	\$3,456
Labor for analyses and report prep.....40 hrs -	\$1,440
Labor for yield study.....40 hrs -	\$1,440
Travel.....	\$350
Total.....	\$13,011

McConnell Road aquifer study:

Equipment and drilling.....	\$6,325*
Labor, not with analyses and report prep...108 hrs -	\$3,456
Labor for analyses and report prep.....40 hrs -	\$1,440
Travel.....	\$350
Total.....	\$11,571

ALL TOTAL.....*\$59,915

*** Assumes that seismic equipment will be rented for each aquifer project therefore all totaled is \$500 greater than previous page**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
ONE CONGRESS STREET SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

Date: June 12, 2008

Subject: Letter report – Investigation of the Hydraulic Connection Between Groundwater & the Neshobe River at the Brandon VT Public Water Supply

**To: Ray Counter, Brandon Fire District, Brandon,
VT Cc: Larry Becker, VT State Geologist
Rodney Pingree, Water Supply Division, VT ANR**

From: Marcel Belaval, Hydrologist, EPA New England – Drinking Water Program

Introduction

The Brandon Fire District operates 3 public water supply wells adjacent to the Neshobe River in Brandon, VT. These wells supply drinking water to the town of Brandon, and draw water from a sand and gravel aquifer underlying and adjacent to the Neshobe River (Figure 1). Wells PW-2 and PW-3 are located in a well field immediately north of the Neshobe River, adjacent to a wetland/oxbow pond complex that was the historical Neshobe River channel. This wetland/oxbow pond complex covers an area of approximately 5 acres, with a 0.5 acre pond closest to well PW-2. The pond, once the main Neshobe River channel, is within approximately 200 ft of PW-2. The pond bottom consists primarily of fine sediments and thick organic deposits (a.k.a muck). Well PW-1 is located approximately 1 km away, south of the present channel of the Neshobe River and Newton Road. The river in this area is underlain by boulders and cobbles and the stratified drift aquifer below it is considered to be unconfined.

Past investigations and drilling logs have shown that a 24 foot thick clay layer is present above the screened interval of well PW-2 (Figure 2); however, the continuity of this layer and its effectiveness as an aquiclude were unknown. The drilling log for PW-3 does not show this clay layer despite the close proximity of wells PW-2 and PW-3, approximately 500 ft away. Consequently, the relationship between these wells and the adjacent surface water bodies (the River and the wetland/oxbow pond complex) has not been well understood. Pumping of the wells PW-2 and PW-3 sets up a groundwater flow condition that may induce aquifer recharge from the nearby surface waters, or draw surface waters directly to the pumping well. Further understanding the general relationship between this sand and gravel aquifer and the Neshobe River, and the connection between the pumping of wells PW-2 and PW-3 and nearby surface water is important for the Town of Brandon as it continues to plan for future water needs and establishes protections for its current water supply.

Scope of Work

In 2007, EPA New England, the VT State Geologist's Office, and the Brandon Fire District worked jointly to characterize the general relationship between the local stratified drift aquifer and the Neshobe River, as well as the connection between the pumping of wells PW-2 and PW-3 and nearby surface water.

The objectives of the study, summarized from the June 2007 Final Work Plan, were to:

- 1.) Determine whether the pumping of Brandon wells PW-2 and PW-3 draws water from the nearby surface water;
- 2.) Determine whether the Neshobe River in Brandon, specifically in the area around wells PW-2 and PW-3 and upstream in the area around PW-1, is losing or gaining to the underlying stratified drift aquifer; and
- 3.) Further define the extent and characteristics of the clay layer recorded in drilling logs from PW-2.

Methods

Piezometers

Piezometers, or small diameter monitoring wells, were installed at three locations using a Geoprobe™ direct-push machine. Piezometers can provide information about vertical groundwater flow when installed in clusters and screened at different depth intervals. The vertical direction of flow, upwards or downwards, can indicate whether a surface water is recharging groundwater (a losing surface water) or if groundwater is discharging into a surface water (a gaining surface water). Additionally, sediment cores collected during the piezometer installation provide direct samples of aquifer materials and can be used to log stratigraphy.

A total of eight, 1 inch diameter piezometers with 2 foot screen sections were installed in June 2007: 1 cluster of 4 piezometers between PW-2 and the wetland/oxbow complex (cluster P1), 1 cluster of 3 piezometers between PW-3 and the wetland/oxbow complex (cluster P2), and 1 piezometer upstream, adjacent to the Neshobe River in the area of PW-1 (P4-1). Figure 1 shows the locations of all piezometers, Table 1 summarizes the depths and screened intervals, and Figure 4 includes a cross-sectional view of the piezometer construction. Table 2 provides the relative elevations of the piezometer locations for reference.

Water Level Monitoring

Water levels in the piezometers were recorded manually by the Brandon Fire District from 7/1/2007 to 10/31/2007. Pump run times recorded by the Brandon Fire District were used to look for changes in water levels as a direct result of pumping. A water level logger (pressure transducer) was used to record the water level of the surface water immediately south of well PW-2 from 8/7/2007 to 11/1/2007 in order to assess the effect of pumping on water level in the surface water body (an apparent oxbow pond). The location of the water level logger is indicated in Figure 1. Pressure measured by the logger was corrected with the barometric pressure and converted to water depth by

assuming the density of water at 62.428 lb/ft³. The water level logger is accurate to ± 0.07 ft.

Results & Discussion

Piezometers – Core Logs

The drilling log for PW-2 shows a 24 foot thick unit labeled “clay” overlying, and presumably confining, the screened interval (Figure 2). Sediment cores retrieved during piezometer installation for P1L2, approximately 170 ft from PW-2, did not encounter this clay layer. The sediment log for P1L2 is shown in Table 3. In general the interval from 5 ft to 32 ft, which corresponds to the clay interval logged in PW-2 when corrected for ground surface elevation, was fine sand to silt with occasional clay lenses (several inches thick). Within this interval, a repeating two-foot-thick rythmite or varve sequence of sand to silt to clay was found. Below 32 ft, the core retrieved from 32-36 ft was poorly sorted coarse sand and gravel. Figure 3 shows a photo of the materials encountered at several different depths.

Depth below ground Surface (ft)	Well Log	Comments
1-5	Fine sand and silt	No clay
5	2 inch layer of gravel	
7		Approx. depth of water table
5-7	Fine sand to silt, well sorted, fining downward	
8	Clay	Several inches thick
8-16	Repeating 2 foot thick pattern of well sorted fine sand to silt to clay, fining downward	
16-20	“	Core disturbed upon retrieval, same materials as 8-16
20-24	“	No core taken
24-28	Repeating 2 foot thick pattern of well sorted fine sand to silt to clay, fining downward	
28-32	“	No core taken
32-36	Poorly sorted coarse sand to gravel	Coarse/fine contact approximately 32 ft
36-52	“	No core taken, Geoprobe™ advancement rate consistent with sand and gravel
52	Gravel/cobble	Refusal – cobble retrieved from drive rod

Table 3: Coring log from P1L2. Note that depths are feet below ground surface at cluster P1. Ground surface at PW-2 is approximately 17 feet higher than ground surface at cluster P1.

Several cores were retrieved and logged during installation of P2L2. The log from P2L2 is shown in Table 4. The precise depth for the screened interval of each piezometer was

determined in the field based on geologic materials encountered during coring (see Table 1 for piezometer construction details).

Depth below ground Surface (ft)	Well Log	Comments
0-12		No core retrieved
12-16	Sequence of fine sand, silt, silty clay	
16-36		No core retrieved, Geoprobe™
		advancement rate consistent with fine sand and silt
36-40	Coarse sand	
48-52	Well sorted fine sand	

Table 4: Coring log from P2L2

The lack of any significant clay layer in the area of the P1 cluster, approximately 170 ft east of PW-2, suggests that the clay logged from 18-42 feet in PW-2 was either misidentified as clay, or is not continuous to the east, terminating between P1 and PW-2. In either case, the lack of a continuous clay layer indicates that the aquifer supplying water to PW-2 and PW-3 is not confined. The fine materials found between 5 and 32 feet in P1L2 and also in P2L2 likely act as an aquitard, allowing slow groundwater movement vertically through this zone. For aquifer protection purposes, the Town should not rely on a clay unit in PW-2 to act as a confining layer for the aquifer.

Water levels – Piezometers & Surface Water

Piezometer P4-1, advanced to refusal at 6.1 ft below the river water level (11 ft below ground surface) did not intercept the water table, indicating a strong downward gradient. Because of P4-

1’s proximity to the river (within 50 ft), this downward gradient provides evidence that the Neshobe River is losing water to the aquifer. This finding is consistent with the regional conceptual model that the Neshobe changes from gaining to losing as it exits the Green Mountain uplands and flows over the sand and gravel deposits of the valley where it loses water and recharges the aquifer.

If the Neshobe River is recharging the aquifer, this means that the river acts as a groundwater recharge boundary to the east of wells PW-2 and PW-3 and to the west of well PW-1. This recharge boundary has an effect on the zone of contribution for each well. For example, the zone of contribution for PW-3 was determined by calculating time of travel based on aquifer data collected during pump tests. The effect of the river’s recharge boundary would make the zone of contribution smaller than originally calculated (as noted in the 1998 Source Evaluation Report for PW-3). This change in zone of contribution is not a concern however, as the existing source water protection areas for the wells should be adequate to protect a smaller zone of contribution.

Water levels measured by the Brandon Fire District (Ray Counter) in piezometer clusters P1 and P2 indicate a general downward flow, consistent with the gradient direction

observed at P4. Figure 4 shows the water level data and corresponding piezometer depths for reference. During the period of water level monitoring, wells PW-2 and PW-3 were following a routine schedule of pumping. Because background water levels were not monitored, the specific effect of pumping on the vertical gradient is unknown. The downward direction of the gradient may be the natural direction and/or the result of pumping wells PW-2 and PW-3; however, no change in gradient direction was observed that could be attributed to pumping. Regardless of the specific effect of pumping, the wetland/oxbow complex south and east of PW-2 and PW-3 does not appear to be an area of groundwater discharge, as might be expected in a wetland area. Rather, the downward gradient observed indicates a losing surface water, again, consistent with the gradient direction observed at P4.

Although no continuous confining clay layer was observed in P1 and P2, as noted above a thick (25 ft) zone of fine sand, silt, and clay likely acts as an aquitard, and any downward flow of surface water from the wetland/oxbow complex near PW-2 and PW-3 is likely limited by this layer. A water level meter deployed in the nearest surface water body to PW-2 (an apparent oxbow pond) showed no detectable change in water level in response to pumping (Figure 5). This finding suggests that water flowing to the pumping wells comes primarily from the aquifer below the aquitard, and surface water in the nearby wetland/oxbow area is not being drawn down as a result of pumping.

Summary

- The sand and gravel aquifer in the area of PW-2 and PW-3 is unconfined, but protected by a 25 ft thick layer of fine sediment that significantly slows the downward flow of groundwater (an aquitard). It is unlikely that this layer prevents the downward flow of water, but it most likely does limit the downward flow. A 24 ft thick clay layer identified in the drilling log from PW-2 was not found in cores retrieved from 170 feet away.
- The Neshobe River loses water to the ground and recharges the sand and gravel aquifer in the area of PW-1, immediately north of Newton Rd. This finding is consistent with the idea that the Neshobe River loses water along its entire stretch through the valley underlain by sand and gravel aquifers. A downward flow gradient was also measured in the area of PW-2 and PW-3. The river likely acts as a recharge boundary for groundwater flow to all 3 supply wells.
- There is no “direct connection” between pumping wells PW-2 and PW-3 and the nearby surface water, a wetland/oxbow pond that occupies the former Neshobe River channel. The water level of the surface water does not change in response to pumping, suggesting that the water pumped is coming from storage in the aquifer, not the nearby surface water.

Piezometer	Total depth below ground surface (ft)	Screened interval below ground surface (ft)	Note
P1L2	53	51-53	
P1L1A	38	36-38	
P1U2	16	14-16	
P1U1	9	7-9	no water
P2L2	52	50-52	
P2L1	38	36-38	
P2U2	16	14-16	
P4-1	11	9-11	no water in piez., river level at 4.9 ft below ground surf. at P4-1

Table 1: Piezometer construction

Station	Elevation of ground surface (ft)	Elevation of top of casing (ft)
P2L1	83.97	85.99
P2U2	84.16	86.53
P2L2	(no data)	85.64
P1L2	87.66	89.53
P1U2	88.19	90.21
P1L1A	88.26	89.89
P1U1	88.31	90.42
NW corner of PW-2 well house	104.72	--
PW-2 well house floor	105.02	--
water level of Oxbow pond on 6/20/2007	77.57	--

Table 2: Relative elevations at piezometer locations

Tables 1 & 2: Piezometer construction and elevation data.



Site Location Map, Brandon, VT

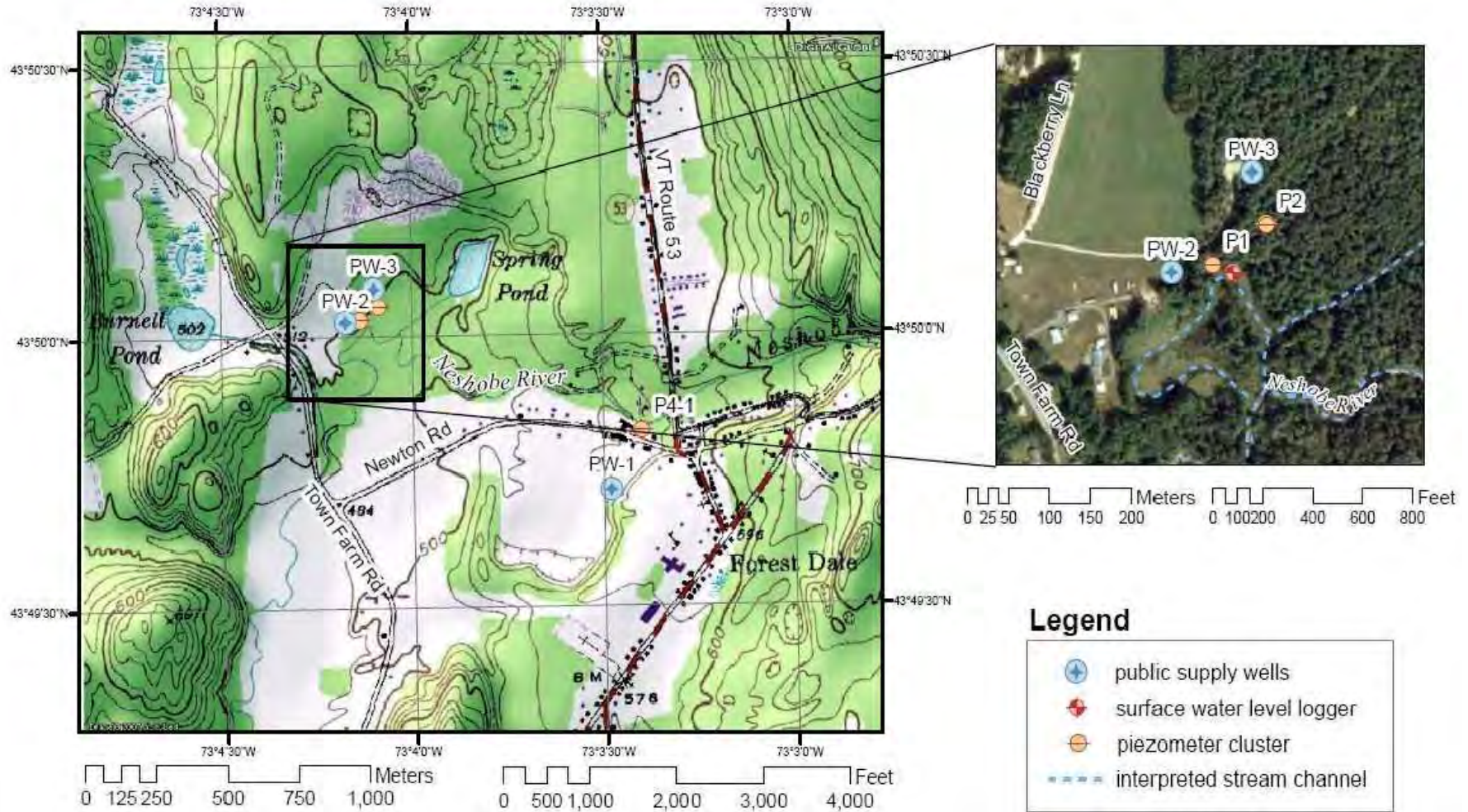
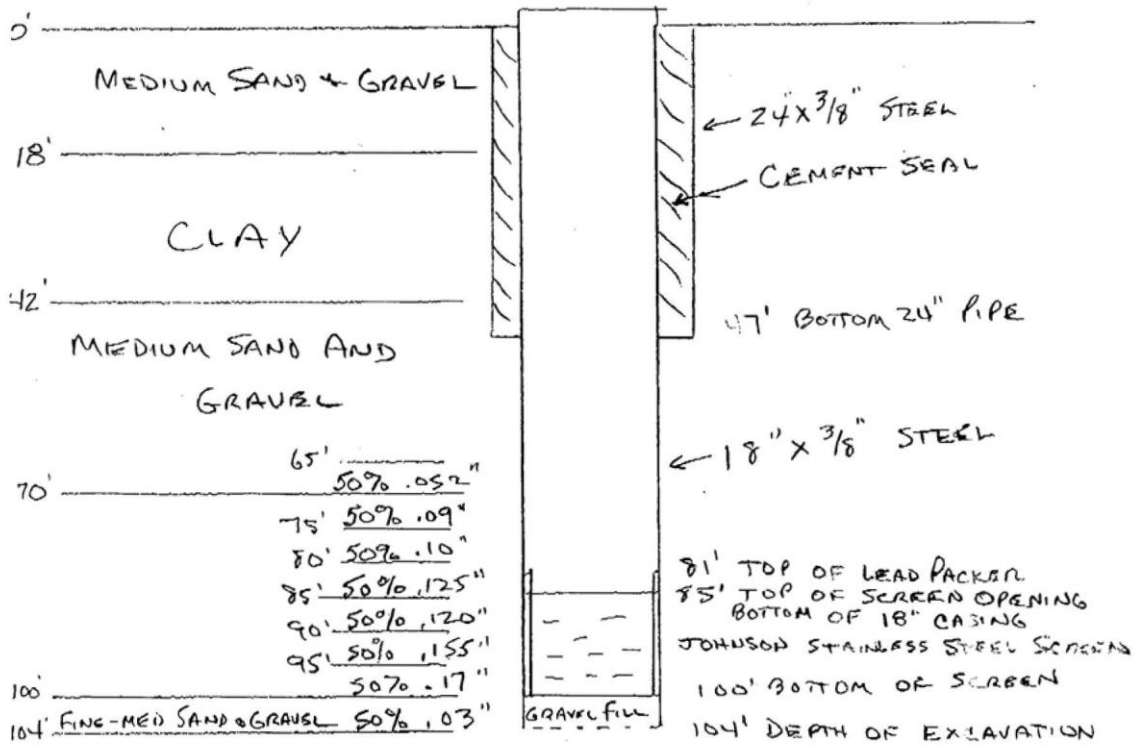


Figure 1: Site Location Map, Brandon, VT



43° 50' 02.11"
 73° 04' 09.98"

BRANDON FIRE DIST.		
WELL # 2		
DATE 8/27/71	SCALE -	1 SHEET
LAYNE NEW ENGLAND CO ARLINGTON MASS.		

Figure 2: Well drilling log for PW-2. Well installed in August/September of 1971.

A.



B.



Coarse sand
from below
32 ft

Silt from
above 32 ft

Figure 3: A.) Installation of piezometer cluster P2 using a Geoprobe™ direct-push machine. B.) Aquifer materials from P1L2, above 32 ft (silt) and below 32 ft (coarse sand).

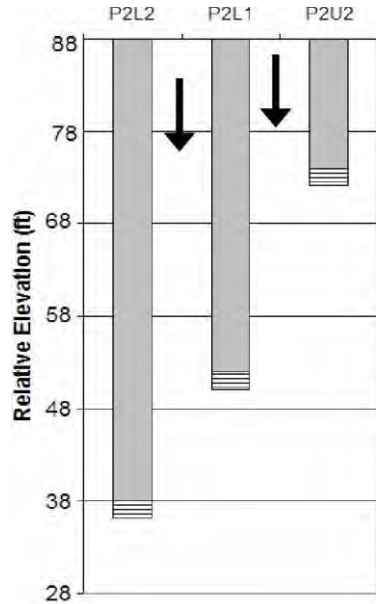
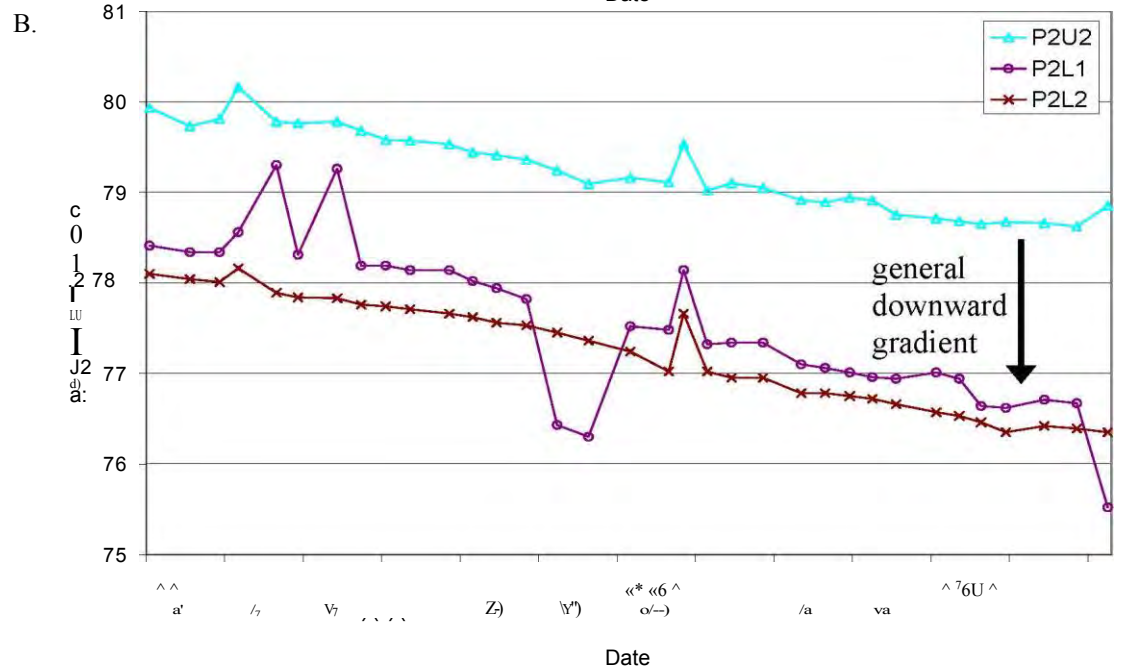
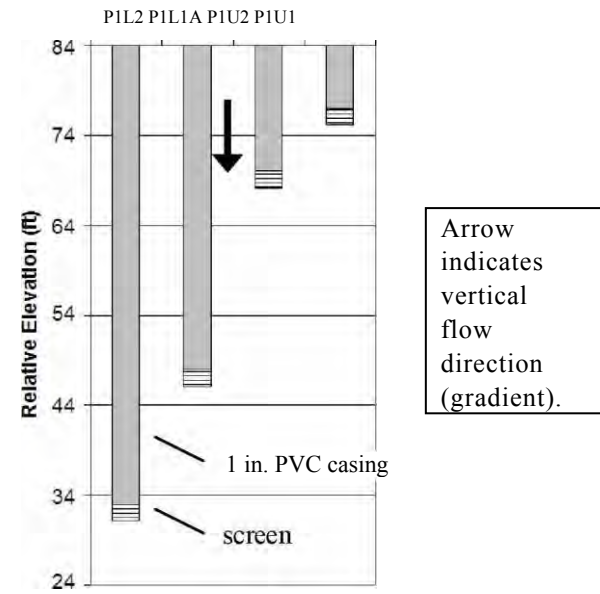
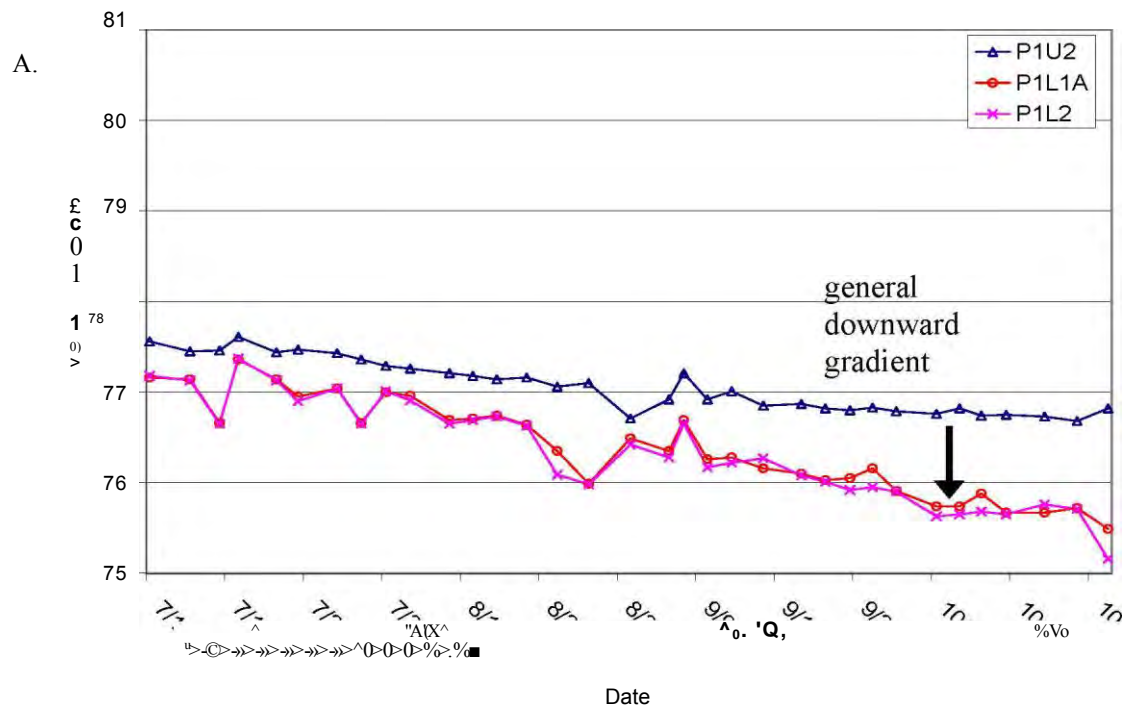


Figure 4: Water levels and piezometer construction diagram for A.) cluster P1, and B.) cluster P2.

Pumping of Wells 2 & 3 and Water Level in Neshobe "Oxbow" (40 min average)
 Pump run times

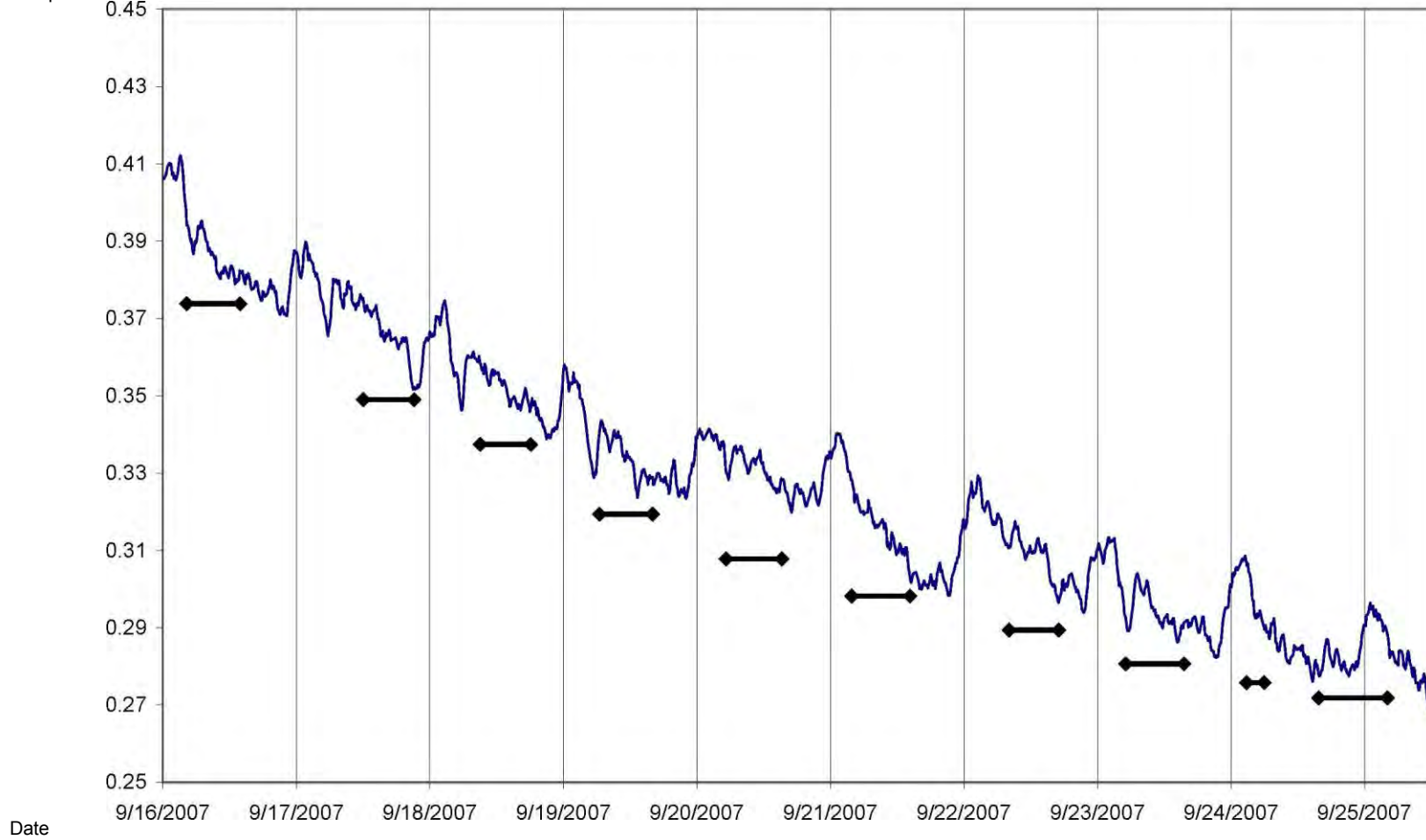


Figure 5: Depth of water in oxbow/wetland area southeast of PW-2 with pump run times for PW-2 and PW-3. The exact location of the water level logger is shown in Figure 1. Water level data were recorded every 10 minutes. Data plotted above are a 40-minute running average to minimize noise.

**Preliminary Report on the Geophysical Investigation of the McConnell Road
Aquifer Prospect, Brandon,VT**

**By David De Simone, George Springston, Jonathan Kim, Marjorie Gale and Laurence
Becker**

**Vermont Geological Survey/Dept of Environmental Conservation
May 8, 2008**

Executive Summary

Introduction

The Vermont Geological Survey (VGS) conducted a geophysical investigation of the McConnell Road aquifer prospect on 22-24 April 2008. This preliminary report presents an interpretation of the geophysical data collected. This interpretation is then integrated with a previous theoretical model of the McConnell Road aquifer prospect.

Prior study of available water well logs and surficial geologic mapping during 2005-2006 indicated the McConnell Road area might represent a viable overburden aquifer prospect (De Simone, 2006, De Simone and Becker, 2007). The VGS proposed to investigate the overburden aquifers of Brandon in 2006 and presented a draft proposal to investigate the McConnell Road prospect in 2007.

The surficial mapping and water well log interpretation indicated there was some water bearing gravel and sand within the sediments filling a possible buried bedrock channel traversed by McConnell Road. The well log data, however, presented conflicting information on the nature of the sediment filling the channel. Well logs suggested there was generally more hardpan in western portions of the valley with more permeable sand and gravel in eastern portions of the valley. Additionally, the well logs indicate there are hardpan units within the sand and gravel in some places and no hardpan units in other places. Additionally, the well data indicated a thick fine grained lacustrine silt and clay unit prevailed in the south while there was sand and gravel or mixed hardpan and sand and gravel to the north in the valley.

To provide data to address these uncertainties, geophysical surveys were conducted in order to assess the overburden stratigraphy and depth to bedrock. A seismic survey was originally proposed and the report of this survey is included as Appendix A. In addition, the VGS conducted a gravity survey as an independent method to assess the overburden stratigraphy and aid in determination of depth to bedrock. The gravity method also serves to cross check the seismic survey. The report on this survey is included as Appendix B. Finally, the previous interpretation of well log data as used in the preparation of stratigraphic cross sections is included as Appendix C.

Results

The seismic survey data for lines S1, S2 and S3 all indicate the presence of a low velocity surface layer consistent with an unsaturated sand and gravel unit ranging from 12-19 ft thickness across the area surveyed. This is consistent with surficial mapping and water well data that are interpreted to indicate a shallow water lacustrine sand unit with an upper surface representing a

beach profile developed in Glacial Lake Coveville that existed approximately from 13,400 – 13,200 years ago.

The seismic survey indicates there is an underlying layer of saturated sand and gravel in the west portion of line S1 while the east portion is seismically faster and somewhat more consistent with a finer grained lacustrine silt layer. This could be the same layer or a denser layer is present as layer 2 in both lines S2 and S3. Water well records indicate more hardpan beneath a surface sand unit in the west portion of the valley and more persistent sand and gravel in the east portion of the valley. However, it should be noted that the seismic lines all were really located in the area originally referred to as the east portion of the valley with the west portion of the valley continuing beyond the extent of this survey. So, the bottom line is there appears to be buried gravel and sand in the *central* portion of the valley identified along the western portion of the agricultural field where the surveys were conducted. The seismic data is supported by the newer well located in the edge of the clearing just north of the eastern end of line S3. The log for this well indicates hardpan beneath the surface lacustrine and beach sand unit. Therefore, it is concluded there must be a hardpan unit that extends into the valley from the east along a sloping bedrock surface tilting from east down to the west. This is suggested as a possibility in the interpretation of cross sections in Appendix C. The integration of the seismic and well log data still supports the existence of a relatively thick sand and gravel unit in the valley fill, especially in the vicinity of seismic line S1 and in the central portion of the valley.

The highest values (in milligals) in the gravity survey were measured in the northwest corner of the agricultural field. This gravity high may be explained two ways: 1) bedrock is closer to the surface, or 2) surficial materials in this area are either thicker or denser than those in surrounding areas. Since the seismic refraction survey demonstrated that bedrock was >200' deep here, hypothesis #1 can be discounted. The seismic survey also indicates that layer 2 beneath seismic line 2 was thicker and denser than layer 2 beneath seismic line #1. By integrating the seismic data with the gravity data in the northwestern quadrant of the study area, we suggest that the thicker and denser surficial deposits in layer 2 are likely responsible for the elevated gravity readings.

One possible interpretation of the gravity data suggests that the depth to bedrock in the prospect area generally increases to the south and this supports the surficial mapping and well log data. Alternatively, the lower gravity values as one moves southward may also reflect less dense surficial materials.

Well log data suggests that the overburden may contain ovoid shaped lenses of hardpan within an otherwise layered sequence of sand and gravel as indicated by the drillers' logs.

An integrated approach is used to suggest a general location for drilling based upon these results. Drilling and accurate logging of the sediment encountered will best reveal the actual nature of the overburden sediment. The search should target a drill location that is most likely to reveal a thicker saturated sand and gravel unit.

Drilling prospect

The small stream that drains Smalley Swamp and empties in to Mill Pond may serve as a source of direct recharge by leakage through its bed into the underlying sand and gravel sediment. Accordingly, a drilling site closer to this stream in the agricultural field may have a better chance of producing a large yield well than a drilling site farther away from this stream.

In the northwestern quarter of the prospect, both the gravity and seismic signatures are consistent with a thick section of denser surficial material. Based on the seismic data and well logs, the depth to bedrock increases moving north and south from seismic line #1 (from 50-90' to >200'). The seismic and gravity data also support a transition from less dense saturated sand and gravel beneath seismic line 1 to more dense till or lacustrine silt and clay beneath seismic line 2. We believe that the saturated sand and gravel would be a more attractive drilling prospect.

Thus, the selection of a drilling site must be a compromise between the indications of the gravity survey, the seismic survey, well logs and desired nearness to the Smalley Swamp outflow stream.

Accordingly, we suggest a test drilling site be chosen somewhere within a rectangular area marked on the east by a line drawn to connect the west ends of seismic lines S1 and S2. The north and south edges of this rectangular area are gravity lines 103 and 99, respectively. The west boundary of the drilling area is chosen to be the edge of the shaded gravity map. This rectangle is shown on Figure 1. The actual drilling site should take into consideration the future needs of the land owner and other practical measures.

The VGS plans to revisit the data and other factors above before suggesting a specific drill site within the identified rectangle. The data from a test drilling will greatly assist in the evaluation of the McConnell Road overburden aquifer prospect.

Acknowledgements

The VGS would like to thank Norwich University for the use of the geophysical equipment and for the field work and report writing of George Springston, Research Associate, in the Department of Geology and Environmental Science. The VGS continues to thank the Town of Brandon and the Brandon Fire District and for funding through a Municipal Planning Grant, awarded by the Agency of Commerce and Community Development.

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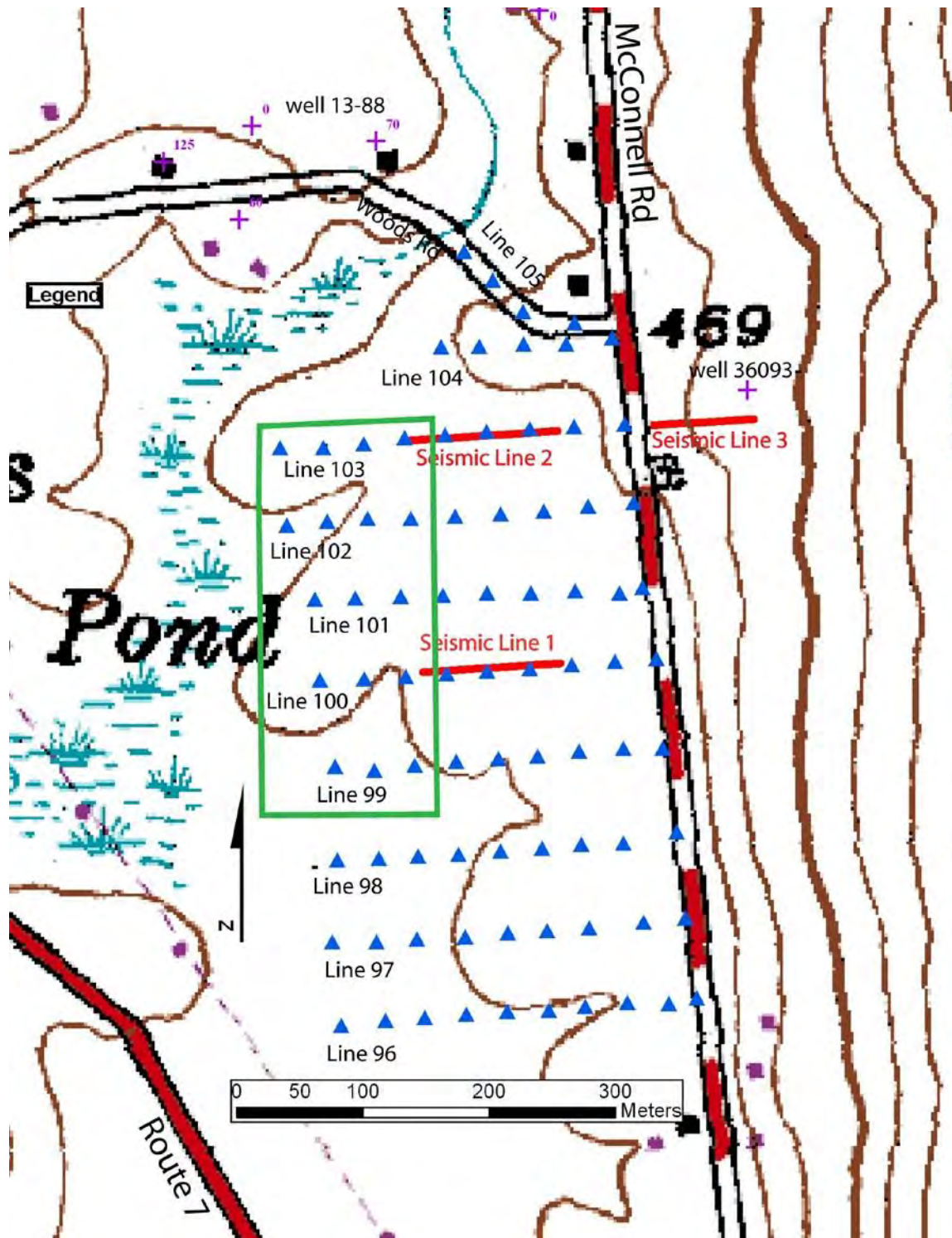


Figure 1: Gravity and seismic survey data collection locations. Blue triangles denote the gravity stations along the 10 numbered gravity survey lines shown. Seismic lines 1-3 are also shown in red. The purple + symbol denotes the location of the newer water well just north of the end of seismic line S3. The green rectangle outlines a suggested area for drilling to further investigate the aquifer prospect.

APPENDIX A

Seismic Refraction Investigation, Brandon, Vermont By George Springston

Methods

A seismic refraction study was undertaken to determine variations in thickness of subsurface layers in the unconsolidated deposits and to determine the depth to bedrock. An EG&G Geometrics Model ES-1225 12-channel engineering seismograph was used with a 110 meter seismic cable with 10 meter spacing between geophones. Seismic energy was supplied by striking an aluminum plate with an 8 pound sledgehammer. The field procedures are described in detail in Redpath (1973).

Three seismic lines were completed. Line S1 is along the southern edge of the unplowed field along Gravity Survey Line 100. Line S2 is in the unplowed field along Gravity Survey Line 103. Line S3 is on the east side of McConnell Road and is an extension of Line S1. All three seismic lines were shot in forward and reverse directions. In addition, offset shots and center shots were made on lines S1 and S2.

The layers are labeled from the surface downward, starting with Layer 1. Velocities are similarly labeled. Note that this nomenclature differs from that of some seismic refraction manuals in which the upper (surface) layer is called Layer 0.

All velocities were derived from plotting first arrival times of P-waves on T-X graphs after the methods described in Redpath (1973). In each case, the velocities for Layer 1 are derived from arithmetic means of forward and reverse velocities (and center velocities where available) and the Layer 2 and Layer 3 velocities are derived from harmonic means of forward and reverse velocities.

The analyses of thicknesses are made using the intercept time method as described in Redpath (1973), with additional constraints on interpretation as described by Ackerman and others (1986). Delay times calculated for the thickness of Layer 1 on Line S1 were in substantial agreement with the intercept time calculations.

Abbreviations:

m meters S seconds
mS milliseconds
m/S meters per second

Data

Line S1 (West of McConnell Road along southern edge of unplowed field)

Length: 110 m Velocities:

V1: 264 m/S (arithmetic mean of forward, reverse, and center velocities)
V2: 1573 m/S (harmonic mean of forward and reverse velocities)
V2 (east half): 1843 m/S (harmonic mean of forward and center-reverse velocities)

V2 (west half): 1507 m/S (harmonic mean of reverse and center-forward velocities)
 V3: 3098 m/S (harmonic mean of forward and reverse velocities) Thicknesses:

Layer 1

East end: 5.1 m = 16.7 feet

West end: 3.6 m = 11.9 feet

Layer 2

East end: 10.2 m = 33.5 feet

West end: 26.0 m = 85.2 feet

Depth to Bedrock:

East end: 15.3 m = 50 feet

West end: 29.6 m = 97 feet

Line S2 (West of McConnell Road along Gravity Survey Line 103)

Length: 110 m

Velocities

V1: 282 m/S (arithmetic mean of forward, reverse, and center velocities) V2: 2211 m/S (harmonic mean of forward and reverse velocities)

V2 (east half): 2118 m/S (harmonic mean of forward and center-reverse velocities)

V2 (west half): 2018 m/S (harmonic mean of reverse and center-forward velocities)

Thicknesses:

Layer 1

East end: 3.8 m = 12.4 feet

West end: 5.7 m = 18.6 feet

Layer 2

West end: greater than 62 m or 204 feet Depth to

Bedrock:

West end much greater than 200 feet

Line S3 (East of McConnell Road in line with Line S2)

Length: 95 m Velocities

V1: 279 m/S (arithmetic mean of forward, reverse, and center velocities) V2: 2135 m/S (harmonic mean of forward and reverse velocities) Thicknesses:

Layer 1

East end: 7.0 m = 23.1 feet

West end: 4.4 m = 14.3 feet

Layer 2

East end greater than 17.1 m or 56 feet

Depth to Bedrock:

East end greater than 89 feet

Interpretations

The Layer 1 velocities are typical of P-wave velocities in unsaturated surficial deposits at shallow depths. For comparison, the mean velocity for similar materials from 6 stratified drift aquifer study sites in New England is 320 m/S (Haeni, 1995, Table 3).

The Layer 2 velocities on Line S1 are consistent with saturated sands or gravels. For comparison, the mean velocity for saturated stratified drift at 6 sites in New England is 1540 m/S (Haeni, 1995, Table 3).

Layer 2 velocities on Lines S2 and S3 appear to be high for saturated sand and gravel. The velocities are more consistent with stiff fine-grained lacustrine silt or clay or dense till. A seismic refraction profile across an unnamed tributary of Furnace Brook about 1.25 miles northeast of Pittsford Mills shows has a second layer that is interpreted to be lacustrine silt and clay with velocities ranging from 1800 to 2100 m/S (Stewart, 1972, Figure 18).

The Layer 3 velocity on Line S1 is consistent with bedrock velocities from other seismic refraction studies that have been undertaken in the area. For example, the seismic refraction profile across the Neshobe River about three fourths of a mile north-northeast of Brandon cited in Stewart (1972, Figure 19) had a bedrock velocity of about 4600 m/S to 4900 m/S and the profile across an unnamed tributary of Furnace Brook cited in the previous paragraph had bedrock velocities of 3,300 and 3,700 m/S (Stewart, 1972, Figures 18).

The possibility does exist that some of the Layer 2 material could be weathered bedrock, which could be expected to have velocities well below 3,000 m/S. This cannot be resolved from the available seismic refraction data.

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APPENDIX B

By Jonathan Kim

Brief Gravity Summary

Corrections Completed:

1. Temperature
2. Drift
3. Free air
4. Bouguer
5. Latitude
6. Terrain corrections were not deemed to be necessary by George and me.

Gravity Observations:

-The total milligal difference between highest and lowest readings in the prospect area is 1.06 milligals so this is “microgravity”.

-No matter how the data are contoured (Inverse Distance Weighted, Spline, or Kriging) the contour pattern is generally the same. IDW and Kriging are more similar to each other than Spline is to either. IDW is shown.

-The highest gravity readings are in the northwestern quadrant of the prospect.

-Gravity readings generally decrease moving north to south.

-The 2006 well (well 36093) at the east end of Seismic Line 3 has a total depth of 162’ and an overburden thickness of 145’ with 31’ of sand overlying 114’ of hardpan. Yield is listed at 60 gpm. This well brings the 200’ isopach much farther to the west.

-The closest well to the northern end of the prospect is well 13-88 and has a total depth of 200’ and an overburden thickness of 70’. Yield is listed at 5 gpm.

Preliminary Gravity Interpretations:

-The gravity high in the NW part of the prospect could be explained as a bedrock ridge beneath the surface; this agrees somewhat with what may be bedrock topographic contours on the western side of the prospect. However, this does not jibe with the seismic refraction data that suggests bedrock depths > 200’ along seismic line 2. If this bedrock ridge were shallower, we would see it with seismic.

-The generally monotonic decrease in gravity values moving to the south is consistent with a bedrock surface dipping gently to the south.

-The gravity contrasts both NW-SE and N-S could be explained by lateral and vertical variation (facies) in surficial materials. DeSimone indicates that sand content increases to the east and north because of the Lake Coveville shoreline and inputs of sand to the lake being from the north and east. He also said that till content in the surficial section increases from east to west in the northern half of the prospect.

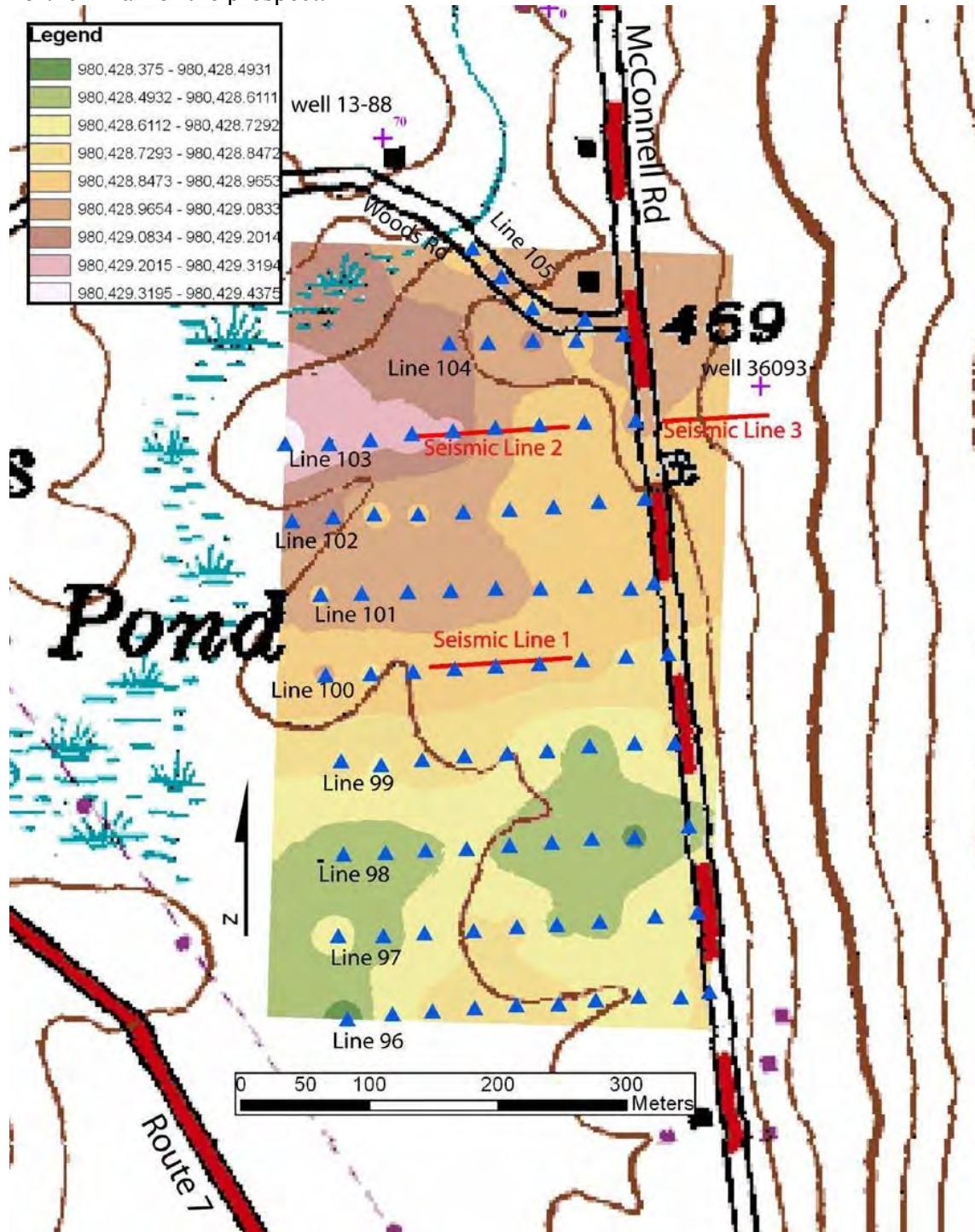


Figure 2: Results of the gravity survey (values in milligals).

APPENDIX C

By David De Simone

Interpretation of Cross Sections Through the McConnell Road Area

SECTION AA’: Depth to bedrock data suggest a glacially over-deepened trough as depicted in the contoured map. The line of section starts on the flank of a bedrock ridge, however, and not in the valley bottom. Gravel wells used in the section terminate in a basal gravel unit whose extent through the section is not known with certainty. Adjacent well logs report either sand and gravel overlying sand or a thick section of hardpan or hardpan with boulders. This is reconciled by depicting a lens of hardpan. Drilling is needed to positively identify the stratigraphy along portions of this section. The distal southern portion of the section is dominated by finer grained lacustrine sediments and not by the coarser gravel and sand units to the north. The coarser grained sediments are sourced in the north where the ice margins stood and where, later, the Neshobe contributed sediment to the lake. The clay and gravel and boulder sand units in the upper portion of the stratigraphy may represent sediment flow diamictos, perhaps flows from the surrounding mountain flanks which occurred shortly after the drop from Quaker Springs to Coveville level. Above these diamictos, there is lacustrine sand capped by a Lake Coveville beach.

SECTION BB’: A basal till unit is reported in 3 well logs used for this section. If present, this suggests that more of the deeper southern portion of Section AA’ would be composed of the hardpan shown only as a lens in that previous section. However, the till does not persist across to the eastern half of section BB’ where a detailed sequence composed of basal ice contact gravel is overlain by sand, sand and gravel, and finally boulder sand. The boulder sand unit in the eastern half of the section could be underlain by an undetermined thickness of till or might persist to bedrock. This ground moraine unit is shown as inter-fingering with the lacustrine units in the deep portion of the section. The inter-fingering is possibly accomplished by numerous sediment flow diamictos within the ground moraine unit that could have formed as sediment sloughed off the ground moraine and flowed into the lake. Coveville beach sediment forms a thin veneer over the shoreline portions on both sides of the section. The western beach is a sand spit exposed in a quarry.

SECTION CC’: Till is shown at the base of this section only to conform to the reported till in section BB’. Its presence needs to be confirmed. The deep part of the section is similar to that of section BB’ in having a water-bearing basal gravel overlain by sand, gravel and finally by finer grained lacustrine sediments. The well logs reported a clay, gravel and boulder unit beneath the lacustrine sands and this is represented as the interfingering sediment flow diamictos discussed in section BB’. They may be more discontinuous than represented on the section but the section follows the reported well logs as closely as possible.