



# SOURCE PROTECTION PLAN

South Main Street Water District (2421010)  
Scenic View Campground (2427040)

Warren, New Hampshire

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***Review Annually and Update Every 3 Years***

Date Reviewed	Reviewer	Changes or Comments

Source Water Protection Plan for Warren, NH

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## **I. INTRODUCTION**

### **A. Background and Purpose**

A Source Protection Plan identifies water system vulnerabilities and enumerates techniques to manage potentially contaminating land uses. This Source Protection Plan covers 2 active Public Water Systems in the town of Warren, New Hampshire, located approximately 15 miles east of exit 15 on Route 91 in Grafton County, New Hampshire (Figure 1). A Public Water System is defined as “a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year” (Chapter Env-ws 300 NH Drinking Water Rules). The public water systems covered by this plan include: South Main Street Water District and Scenic View Campground. This Source Water Protection Plan was developed to protect the quality and quantity of these sources and was prepared by the Warren Source Water Protection Committee with assistance from Northeast Rural Water Association. The objective of this plan is to identify potential contamination sources that occur within the Source Protection Areas of these two public water supplies and to provide specific recommendations to manage these potential threats in order to maintain quality drinking water. This plan is a working document that will be reviewed annually and updated every three years to remain current, active, and viable.

These Public Water Systems rely on groundwater for their sources. The water stored in the pores, cracks, and openings of subsurface rock material is groundwater. Groundwater is one of the Earth’s most valuable resources. Wells dug by hand or machine have been used throughout history to retrieve water from the ground. The word aquifer is used to describe an underground formation that stores and transmits groundwater.

A Source Protection Plan consists of the following basic elements:

- An inventory of potential contamination sources (PCS’s);
- An assessment of risks posed by these PCS’s;
- A management plan to minimize risks to the water source(s); and
- A contingency plan for responding to emergency loss of the water supply.

A carefully researched and thoughtfully drafted Source Protection Plan is an important first step in source water protection because it sets priorities for actions to take in protecting a water source. Actions taken by water system management, surrounding landowners, and the larger community are key to achieving comprehensive protection.

### **B. Description of the Water Systems**

#### *South Main Street Water District*

##### **Existing Demand**

South Main Street Water District is classified as a Public Community Water System. A Public Community Water System is defined as a “water system which serves at least fifteen service connections used by year-round residents or regularly serves at least twenty-five year-round residents (Chapter Env-ws 300 NH Drinking Water Rules). South Main St. Water District has 47 service connections 39 residential and 8 commercial

customers, serving a total average population of 200 people. Included in this population are the Warren Elementary School, the medical center, town office building, town hall, two restaurants, a church, and a village market. No fire protection services are provided currently. The system pumping records indicate that average daily demand during the winter months is approximately 8,000-10,000 gallons per day (gpd). Operating records for the system show average daily demand during the summer and between 15,000-18,000 gpd during the summer. The maximum daily demand of record is approximately 25,000 gpd.

#### **Water Supply, Storage, and Treatment**

According to NH DES records the system dates back to 1943. The system obtains its water from two shallow gravel packed wells. These wells are located just north of Main Street, located behind the Town Offices in the elementary school field (Figure 2). Well #1 (source 002) was the original water source for the elementary school. In 1994 the school's well was connected to the District system and the well was to serve as the District's backup well. Well #1 is a dug well, approximately 15 feet deep and constructed of 3-foot diameter concrete well tiles. This source is located approximately 126 feet southwest of the pumphouse. In 1994, a 12-hour pump test was conducted at a pumping rate of 28.7 gpm. During the pump test stabilization was achieved but submergence of the submersible pump was minimal. Based on recommendations by Provan & Lorber, Inc., the existing submersible pump was replaced and a new centrifugal well pump capable of pumping 30 gpm (Provan & Lorber, July 2004). Well #1 has a permitted production volume of 45,360 gallons.

Well #2 (source 003) is a shallow horizontal gravel well that was constructed in September 1994. This source is located approximately 65 feet southwest of the pumphouse. A horizontal gravel well was constructed due to the high hydraulic conductivity of the native material and limited saturated thickness (approximately ten feet) of the aquifer (Provan & Lorber, July 2004). The well has a vertical 8-inch diameter steel casing with two horizontal 3-foot long stainless steel screen laterals. The screens are located approximately fifteen feet below grade in a crushed stone envelope. Well #2 was pump tested for 66 hours upon completion and has a final permitted production volume of 31 gpm (44,640 gpd). A 30-gallon per minute centrifugal pump supplies water to the system (Provan & Lorber, July 2004). Permitted production volume for well #2 is 41,330 gallons.

Water is drawn from the wells on an alternating schedule: each well operates for one week and then is allowed one week to rest. Water from both wells is pumped to a single story wood-framed pump station, located adjacent to the wells across the recreational trail. The pump station contains a 4,000-gallon steel atmospheric storage tank, duplex 5HP centrifugal booster pumps. Each pump is capable of pumping water at a rate of 100 gpm. The water is transferred by the duplicate booster pumps to a 3,082 gallon steel hydropneumatic storage tank. The water is treated for corrosion control and lead and copper by use of sodium bicarbonate and potash respectively. There is also a chemical feed system available for chlorine disinfection. After treatment, water is provided to 42 services connected to the distribution system.

#### **Distribution**

The water mains in the system consist of small diameter plastic pipe. A 4-inch diameter Class 100 PVC main runs south from the pump station along the recreation trail, crosses Main Street and Route 25C, and connects to two parallel 3-inch diameter PVC

water mains that run down the east and west sides of Route 25 to the Baker River bridge crossing. A second 4-inch diameter PVC main extends west along Main Street to serve the Town Hall, restaurant, and several homes on Route 25c. The Catholic Church on Route 25C across from School Street is the most northerly property currently served by the District on Route 25C.

#### **Future Demand**

Future demand of the system is estimated to increase. For example, by 2006 grades 7 and 8 are supposed to join the Warren school. This addition will increase the average daily demand from 16,480 gpd to 17,610 gpd. In addition, the District desires to increase the service area to include:

- Scenic View Campground
- The saw mill to the West on Route 25C; and
- Homes north on Route 25 to the intersection of Route 118.

These extensions will result in the addition of fifteen mobile home connections, eighty-two campground lots, and nine coin-op laundry machines at Scenic View Campground; Twenty five homes and a saw mill on Route 25C; and 34 homes on Route 25 between Routes 25C and 118. These connections will add approximately 34,280 gpd to the average demand of the system (Provan & Lorber, 2004a rev.). Thus estimates indicate that by 2025, average day demand will be approximately 51,890 gpd or 36 gpm (Provan & Lorber, 2004a rev.).

The District is currently exploring improvements with Provan & Lorber Inc. to help meet this future demand.

#### *Scenic View Campground*

##### **Existing Demand**

Scenic View Campground water system is classified as a Transient Non-Community water system. A Transient Non-Community water system is defined as “a non-community water system that does not regularly serve at least the same 25 persons over six months of the year (Chapter Env-ws 300 NH Drinking Water Rules). The Scenic View Campground System is located just north of the Wentworth, NH border and south of the center of Warren. The property is bounded on the western side by Patch Brook, Baker River, and the northern boundary by Hurricane Brook. Route 25 is on its eastern boundary (Figure 3). There are three wells on the property. Well #1, located between campground lots 5 and 6 towards the southern end of the property, is an inactive dug well. Well #2 is a 41-foot deep gravel-packed well and has a yield of 25 gpm (Dominic, 1996). Water flows from Well #2 through a pressure tank located within the laundry building (WX-350, 119 gal) to a pressure tank located within the basement of the main house / office building (WX-350, 119 gal). Water is distributed throughout the campground, laundry building, bathhouses, and to eight mobile home units connected to the distribution system. No treatment is provided and the water from well #2 is supplied to a total of 98 service connections (87 campsites, 2 bath-houses, 1 public Laundromat, and 8 mobile home units). Well #3 is a 47-foot deep gravel packed well which serves 7 mobile home units and the family/home office. This well is on a separate system from Well #2 and is not considered a public well. Well #3 is located in a grassy area just north of lots 31A and 31B.

Prior to 1996, an unapproved cross connection existed between the unregulated water system served by Well #3 and the regulated public system served by Well #2. Previously only a closed valve separated the systems. According to correspondence from

Donald McKay on 11/6/96 the “crossover and valve between the two systems has been removed”.

**Table 1. Summary of Well Information.**

WSID	Water System Name	Well Name	Type	Depth (ft)	Yield (GPM)
2422010-002	South Main St. Water District	Well # 1	Dug	15	28.7
2422010-003	South Main St. Water District	Well #2	GPW	17	31.5
2427040-001	Scenic View Campground	Well #1	Dug	Unknown	Inactive
2427040-002	Scenic View Campground	Well #2	GPW	41	25
2427040-003	Scenic View Campground	Well #3	GPW	47	10

**C. Delineation of Wellhead Protection Area and Sanitary Protective Radius**

The area under which groundwater flows to a producing well is known as the Wellhead Protection Area (WHPA). For bedrock wells, the WHPA is a circle whose radius depends on the maximum daily amount of water withdrawn from the well. For till and gravel wells, the WHPA has been calculated based on existing hydrogeologic information.

Another type of protected area is a groundwater source’s Sanitary Protective Radius. The Sanitary Protective Radius is a 75 - 400 foot radius around a well which under current law must be controlled by the water supplier through ownership or easement. The extent of the Sanitary Protective Radius depends on the permitted production volume for the well (Table 2). To facilitate protection of the drinking water source, it is necessary to know the delineation of the Sanitary Protective Radius and its boundaries on the ground. Within the Sanitary Protective Radius only activities that are both directly related to the water system and non-threatening to water quality should occur. Regular inspections of the Sanitary Protective Radius help to identify any potentially threatening land use activities.

**Table 2. Sanitary Protective Radii**

Permitted Production Volume (gallons)	Radius (feet)
< 14,400	150
14,401-28,800	175
28,801-57,600	200
57,601-86,400	250
86,401-115,200	300
115,201-144,000	350
> 144,000	400

Source: Env-Ws 378.06 Sanitary Protective Area

Within any of the aforementioned protected areas, land uses and/or naturally occurring materials may cause a public water system to be vulnerable to contamination. While naturally occurring contaminants can usually be controlled by treatment methods, potentially contaminating land uses can be managed by activities outlined in a Source Protection Plan. A Source Protection Plan identifies water system vulnerabilities and enumerates techniques to manage potentially contaminating land uses. Following are descriptions of the drinking water sources and their associated protected areas.

#### *South Main St. Water District*

The wellhead protection area for the two wells was delineated by D.L. Maher Co. (D.L. Maher Co., 1994) (Figure 2). Each of the District wells has a sanitary protective radius of 200 feet. The sanitary protection areas were delineated in January 1995 prior to the revision of Env-Ws 378 rules which specifies radius size based on permitted production volume.

The water supplier must either own the land within the sanitary protective area or control the land by perpetual easement. The District holds two easements, one from the Town and one from the Warren School. The sanitary protective area must be maintained in a natural state except for structures and activities necessary for the maintenance of the well that do not pose a contamination risk to groundwater. Within the radius there should be no buildings, septic tanks, leach fields, oil, debris, or other hazardous materials.

#### *Scenic View Campground*

Well #2 was constructed prior to the revision of Env-Ws 378 rules which specifies sanitary radius size based on permitted production volume. However, if these rules were applied, the radius for well #2 would be 150 feet. For the purpose of this report, a sanitary protective radius of 150 feet was applied to well #2 and well #3.

## **II. CHARACTERISTICS OF THE SOURCES AND SOURCE PROTECTION AREAS**

### **A. South Main St. Water District**

#### *Geology and Soils*

The wellhead protection area is underlain by Bethlehem Granodiorite. This bedrock is described as gray, strongly foliated biotite-muscovite granodiorite and associated tonalite and granite. According to the "Soil Survey of Grafton County Area" there are 7 soil map units in the wellhead protection area (Figure 5). Within the sanitary protective radius there are two soil types: Colton Loamy Sand and Croghan Loamy Sand. The Colton series consists of very deep excessively drained soils on outwash terraces, kames, and eskers. Colton soils formed in stratified, water deposited, sandy sediments. The thickness of the solum, the upper part of the soil profile, ranges from 18-36 inches. The Croghan series consists of very deep moderately well-drained soils on stream terraces, kames, and eskers. These soils also formed in stratified, water deposited, sandy sediments. The thickness of the solum ranges from 20-40 inches.

The properties of these two soil types are conducive to water development. However, because these soils are coarse textured and low in both clay and humus content, they have a limited ability to adsorb cations and filter out pollutants. These conditions make the wells vulnerable to contamination from activities on the land's surface.

Furthermore, the District's wells are shallow wells that maybe susceptible to reduced flow during drought conditions (Provan & Lorber, 2004b rev).

#### *Water Quality*

In July 1999, a bacteria sample submitted by the District tested positive for bacteria. There have been no other positive results since this date. In 2001, lead and copper samples exceeded the maximum contaminant levels. The maximum contaminant level for copper is 1.3 mg/L. Test results for a water sample were 4.08 mg/L copper. The maximum contaminant level for lead is .015 mg/L. Test results for a water sample .0226 mg/L lead. The system has performed repeated testing for copper and lead. The system is trying to limit distribution corrosion through the use of sodium bicarbonate and potash. As of April 2004, water samples continued to exceed the maximum contaminant level for copper.

The system received 3-year sampling waivers for volatile organic compounds and a 6-year waiver synthetic organic compounds. The system has currently applied to renew the VOC waiver.

Chloride levels appear to meet drinking water standards. However, experience in other municipalities has shown that uncovered salt piles frequently lead to well contamination. This situation remains a liability for the town. Once contaminated it is very difficult to flush salt from the groundwater.

### **B. Scenic View Campground**

#### *Bedrock Geology and Soils.*

The area surrounding the wells is underlain by Bethlehem Granodiorite. This bedrock is described as "gray, strongly foliated biotite-muscovite granodiorite and associated tonalite and granite. According to the "Soil Survey of Grafton County Area" there are two soil map units in the sanitary protection area (Figure 6). These soils are classified as: Colton Loamy Sand and Sunday Loamy Sand. The Colton series consists of very deep excessively drained soils on outwash terraces, kames, and eskers. Colton soils formed in stratified, water deposited, sandy sediments. The thickness of the solum, the upper part of the soil profile, ranges from 18-36 inches. The Sunday series consists of deep, excessively drained soils on the floodplains of major streams and rivers. Sunday soils formed in recently deposited sandy alluvial sediments. The thickness of the solum is commonly 40 inches. The properties of these two soil types are conducive to water development. However, because these soils are coarse textured and low in both clay and humus content, they have a limited ability to adsorb cations and filter out pollutants. These conditions make the wells vulnerable to contamination from activities on the land's surface.

### **III. INVENTORY OF POTENTIAL CONTAMINATION SOURCES**

In order to assess current and future impacts from land uses in the wellhead protection areas, past land use was reviewed, existing zoning was determined, and a review of current property owners and their associated land uses was conducted. There is no zoning in Warren. Windshield surveys were conducted by members of the Source Water Committee during July 2004 with assistance from Northeast Rural Water Association staff. This information has been combined for the current inventories of

Potential Sources of Contamination for South Main St. Water District (Table 3) and Scenic View Campground (Table 4).

### **A. South Main St. Water District**

Potential contamination sources (PCSs) are identified in Figure 7 and listed in Table 3. A parcel map is presented in Figure 8. Seven PCSs have been identified within the District's wellhead protection area. Three PCSs are located within the wells' sanitary protection area, within 200 feet of the wells. The sanitary protective area must be maintained in a natural state except for structures and activities necessary for the maintenance of the well that do not pose a contamination risk to groundwater. Currently these requirements are not being met at the District water system.

#### Municipal Salt Pile, Parking Lot (PCS #6)

Presently there is an uncovered salt/sand mixture pile (PCS #6) located within 180 feet of the wells. The salt pile is uncovered and is not located on an impervious surface. Salt piles must be covered at all times and be located on an impervious surface in order to prevent rain water from leaching salt into the water supply. If water quality results show increased results above the Maximum Contaminant Levels and these results are attributable to the municipal pile, effective treatment will have to be installed or a new well will have to be established.

Road salt is considered a potential contamination source because it can lead to elevated levels of sodium and chlorides in wells. Salt is a relevant public health concern because of the effects of salt on hypertension. Over the past 30 years, communities in the Northeast have reported higher sodium and chloride concentrations in private wells and public water supplies. Many of these problems have resulted from improper salt storage.

This general location is also used as a parking lot for the ballfield. Although "no parking" signs have been installed, cars are frequently parked in this area, close to the wells. Leaking automotive chemicals from parked cars can negatively impact the quality of groundwater sources. Of particular concern is the gasoline additive MTBE, which is very difficult to treat.

#### School Parking Lot (PCS #2)

In order to receive final approval of the District's wells, the District acquired easements from two properties in order to protect the wells. Acquisition of these easements was supposed to ensure that vehicles did not park within the wells' sanitary protective area. This condition is not currently being met. During the windshield survey in July 2004, cars were found parking within the sanitary protective radius. As mentioned above, leaking automotive chemicals from parked cars can negatively impact the quality of groundwater sources.

#### Horse Pasture (PCS #5)

A horse pasture is located within the wellhead protection area, just north of the sanitary protective radius. A horse pasture is considered a potential contamination source of pathogens associated with horse manure. Pathogens found in manure include viruses, parasites, and bacteria such as fecal coliform (e. coli). Vegetated buffer strips can serve as a filter for straining out pathogens from an active pasture. In a relatively flat area, there should be a vegetated buffer strip of at least 50 feet between the pasture and the wells (Finley, 1987). This pasture has only a few horses and is approximately 250 feet from the wells.

### On-Site Septic Systems (PCS # 1, 4, 7)

Septic systems are potential sources of bacteria, viruses, and protozoa which can cause gastrointestinal illness, cholera, hepatitis A, or typhoid if consumed. In addition, if improperly used, such as for disposal of paints, solvents, petroleum products and other household hazardous wastes, septic systems can be a source of organic compounds as well. Septic systems should be maintained regularly by pumping out wastes every 3-5 years. There is one septic system within the wellhead protection area PCS #4, in the field north of the wells. The other two septic systems are located just outside of the wellhead protection area. One system is the school's septic, and the other belongs to the Methodist Church.

### Recreational Trail (PCS #3)

The Town recreational trail bisects the sanitary protection radius, passing close to the wells and wellhouse. This path is used by individuals riding snowmobiles, ATVs, horses, cars, motorbikes, and bicycles. In addition the path is used by x-country skiers and dogsled teams. All of these uses pose potential risk to the water sources. For example, motorized vehicles have the potential to spill petroleum products. Dogsled teams can be a source of animal waste. There is a 10 mph speed sign close to the pump house and local police and fish and game help enforce the speed limit.

**Table 3. South Main St. Water District Potential Contamination Sources (PCS's) Inventory**

Property Tax Map ID	Name / Address	Property Use	Potential Contamination Source (PCS)	PCS #	Location
10-40	Warren School District 11 School St. Warren, NH 03279	School- Septic system Parking Lot	Pathogens Automotive chemicals	1	Outside WHPA
				2	In Sanitary radius
10-237	ROW Town of Warren PO Box 66 Warren, NH 03279	Recreational trail used by ATVs, horses, cars, motorbikes, bicycles, dog sled teams, and x-country skiers.	Volatile organic chemicals Pathogens	3	In Sanitary Radius
10-256	Gary & Tammy Stevens 447 NH RT 25 Warren, NH 03279	Residential – Septic system, household hazardous waste Horse pasture	Pathogens Pathogens	4	In WHPA
				5	In WHPA
10-234	Town of Warren PO Box 66 Warren, NH 03279	Town Offices Salt/Sand Storage Parking Lot	Sodium Chloride Automotive chemicals from parking lot	6	In Sanitary Radius
10-234-1	South Main St. Water District South Main Street PO Box 218 Warren, NH 03279	Water Supply			
10-236	Methodist Church 13 School St. Warren, NH 03279	Religious- Septic System	Pathogens	7	WHPA
10-140	David & Helen Caverhill 457 NH RT 25 Warren, NH 03279	Field			
7-20	John & Ethel Geist Hollandale Apt 5J Clifton Park, NY 12065	Forested			
7-19	King Forest Industries 53 East Side Rd. Wentworth, NH 03282	Forested			

## **B. Scenic View Campground**

An inventory of potential contamination sources (PCSs) is presented in Table 4 below. The locations of these PCSs are presented in Figure 9. Eight PCSs have been identified within 500 feet of the wells #2 and #3. Five PCSs are located within the sanitary protection areas, within 150 feet of the wells. The sanitary protective area should be maintained in a natural state except for structures and activities necessary for the maintenance of the well that do not pose a contamination risk to groundwater. Currently these requirements are not being met for the campground's water system.

### Dirt Road (PCS #1)

Roads are considered potential contamination sources because of the potential for spills from automobiles. The road is used primarily by the owners of 5 recreation vehicles. Volatile organic chemicals, and the gasoline additive MTBE are just some potential contaminants. Volatile organic chemicals (VOC's) volatilize rapidly and thus are less of a concern for surface water supplies. However, VOC's have the ability to contaminate groundwater supplies. Perhaps of greatest concern is the potential for MTBE to contaminate a groundwater supply. MTBE is a gasoline additive which is extremely difficult to treat. Data from state environmental agencies in the Northeast revealed that drinking water supplies for over 15 million Americans are contaminated with MTBE. Even at trace levels, MTBE renders water undrinkable due to foul taste and odor (Environmental Working Group, 2004).

### Recreation Vehicles (PCS #2)

There are 8 recreational vehicles (RVs) located within the sanitary radius. One RV is approximately 6 feet from the well. During a site visit a gasoline can was found next to RV just feet 6 from the well. There is the potential for spills to occur from household hazardous waste.

### Septic Systems (PCS #3-5)

As mentioned previously, septic systems are a source of pathogens. In addition, if improperly used, such as for disposal of paints, solvents, petroleum products and other household hazardous wastes, septic systems can be a source of organic compounds as well. According to the campground owner, septic system PCS #3 has been pumped once in ten years PCS #4 has been cleaned out once and PCS #5 is not used much and has not yet been pumped.

### Patch Brook (PCS #6)

Well # 2 is located in the bank of Patch Brook. Due to this location, the well may, during certain times of the year, draw water directly from Patch Brook. Ground water "under the direct influence of surface water" means the groundwater source is located close enough to nearby surface water, such as a river or lake, to receive direct surface water recharge. If a portion of the groundwater source's recharge is from surface water, the groundwater source is considered at risk of contamination from pathogens such as *Giardia lamblia* and viruses, which are not normally found in true groundwaters.

### Dirt Road (PCS #7)

There are several dirt roads within the sanitary protective radius for well #3. See PCS # 1 for concerns.

Recreational Vehicles (PCS #8)

There are 3 motor homes located within the sanitary protective radius for well #3.

**Table 4. Scenic View Campground Well #1 Potential Contamination Sources (PCS's) Inventory**

Property Tax Map ID	Property Use	Potential Contamination Source (PCS)	PCS #	Well #	Location
12-12	Dirt Road	Volatile organic compounds	1	2	In Sanitary Radius
12-12	8 Motor Homes	Household hazardous waste Volatile organic compounds	2	2	In Sanitary Radius
12-12	Multiple Dirt Roads	Volatile organic compounds		2, 3	Within 500 feet
12-12	Septic System	Pathogens	3	2, 3	Within 500 feet
12-12	Laundry Septic System	Nutrients	4	2, 3	Within 500 feet
12-12	Pool Septic System	Pathogens	5	2, 3	Within 500 feet
	Patch Brook	Groundwater Under the Direct Influence of Surface Water	6	2	In Sanitary Radius
12-12	Dirt Road	Volatile organic compounds	7	3	In Sanitary Radius
12-12	3 Motor Homes	Household hazardous waste Volatile organic compounds	8	3	In Sanitary Radius

## **IV. MANAGEMENT OF RISK**

After reviewing the inventory of potential contamination sources for each of the water systems, the Source Water Protection Committee developed a list of management priorities. These activities are discussed more specifically in the summaries and tables below.

### **A. Town-Wide Activities**

#### **Education and Outreach**

The Warren Source Water Protection Committee and its partners will implement an education and outreach campaign. Public education and outreach are central to this plan because increased awareness leads to better management of contamination risks within the wellhead protection areas. The campaign will include encouraging the Warren Elementary School to take advantage of Project WET activities (Appendix 1), distribution of educational brochures (See Appendix 2) to town residents and users of the recreation trail (such as local snowmobile club), communication with Warren Department of Parks and Recreation regarding parking within the sanitary protective radius (Appendix 3).

#### **Source Water Protection Committee**

The Warren Source Water Protection Committee will oversee implementation of the measures outlined in this Source Protection Plan. After the management activities in this plan have been implemented, the Committee will meet once per year, at a minimum, to review the plan. The Steering Committee will be composed of members such as:

- a. Water System Operators
- b. Health Officer
- c. Selectmen
- d. A member of the Planning Board
- e. A representative from the Warren Elementary School
- f. A Warren resident
- g. A representative from the Warren Highway Department
- h. A representative from the Fire Department

### **B. South Main St. Water District**

#### **Education and Outreach**

The District will communicate by letter with property owners within the wellhead protection areas, (Appendix 4) and with Permitting Agencies (Appendix 5). The District will write a letter to the Village School to request that parking occur outside of the sanitary protective radius and that the school septic system be regularly maintained. In this letter the District will remind the school about the existence of the conservation easement which was developed to protect the drinking water sources.

#### **Relocation of Municipal Salt Pile**

The South Main St. Water District has secured written support from the Warren Board of Selectmen to relocate the municipal salt pile. A new location has been identified and secured. The District is currently applying for a Source Water Protection Grant from NH DES to help defray the costs of constructing a building to house the salt pile.

**Table 5. Management activities for South Main St. Water District, Warren, New Hampshire.**

Concern	Action	Responsible Party	Date Completed
Water Resources Education	<ol style="list-style-type: none"> <li>1. Encourage teachers at the Warren Village School to attend a Project WET workshop. Project WET provides teacher with a ready-made water resources curriculum which fits NH core curricula.</li> <li>2. Distribute source water protection brochure to town residents .</li> </ol>	<p>Warren Source Water Committee</p> <p>Warren Source Water Committee</p>	
Warren Elementary School Septic System	Write letter to School District reminding them of location of District wells, importance of septic system maintenance, the existence of the conservation easement, and that no parking should take place within the sanitary radius.	South Main Street Water District	
Recreational Trail / Ball Park Parking	Distribute an educational brochure about source protection as it relates to using the recreation trail and ball fields. The brochure will discuss potential contamination sources relating to recreation and parking in the sanitary radius. This brochure will be distributed to the local snowmobile club, town residents and the warren Department of Parks and Recreation. Send letter to Warren Parks and Recreation Department regarding protection of wells. Communicate with snowmobile club, and other users.	Warren Source Water Protection Committee	
Septic System, household hazardous waste	Write letters to the property owners within the WHPA. Request that they properly maintain their septic system and dispose of household hazardous waste at specified collection days. Alert owner of horse pasture that horse manure is a potential source of contamination.	South Main Street Water District	
Source Water Plan	Implementation and update by Source Water Protection Committee.	Source Water Protection Committee.	
Town Salt Pile	Apply for 2005 Source Water Protection Grant from New Hampshire Department of Environmental Services. Purpose of project to relocate municipal salt pile and construct building.	South Main Street Water District	

## **C. Scenic View Campground Management Activities**

### **Lack of backflow prevention.**

Although not currently required by NHDES, the installation of backflow prevention at each spigot would greatly increase protection of water sources.

### **Relocation of Recreation Vehicle.**

Currently there is a mobile home located 6 feet from well #2. This makes the well vulnerable to spills, tampering and potential accidents. Ideally the mobile home should be relocated. If this is not possible, residents should be made aware of the well's location and the importance of protecting this source.

### **Septic Systems.**

There are a number of on-site septic systems located within the campground property. These systems should be used and maintained properly. Generally, septic tanks should be cleaned out every three to five years, depending on the size of the tank and the amount and quality of solids entering the tank. As a rule of thumb, the clean-out interval is determined on the basis of 100 gallons of tank capacity per person per year. For example, a 1,000-gallon tank used by a family of two should be cleaned after five years [ $1,000 \text{ gal} \div (100 \text{ gal per year} \times 2 \text{ people}) = \text{five years}$ ]. Checking sludge and scum build-up can be an unpleasant task. The best suggestion for determining a maintenance schedule is simply to have the tank pumped at regular intervals. The cleaning of a tank should be done by a commercial septic tank cleaning service (Jemison 2004).

### **Source Protection Education .**

Distribute a source protection brochure which describes the sources of the campground's water and the necessity for protecting these sources.

### **Groundwater Under the influence of Surface Water.**

Check to see if well #2 is directly under the influence of surface water from Patch Brook. A water system may either conduct a hydrogeologic investigation to determine whether the source is hydraulically connected to a nearby surface water or Microscopic particulate analysis can be performed. The water system collects a sample of source water and sends the sample to a laboratory for a microscopic particulate analysis. If certain numbers or types of surface water organisms are found in the groundwater samples, the source is designated to be under the direct influence of surface water.

**Table 7. Management of Potential Contamination Sources for Scenic View Campground, Warren, New Hampshire.**

Concern	Action	Responsible Party	Date Completed
Lack of backflow prevention	Put in backflow prevention for each spigot.	Scenic View Campground	
Location of recreation vehicle 6 feet from well.	Ideally relocate recreation vehicle from location.  At very least educate residents living in the sanitary radius of vulnerability of well.	Scenic View Campground	September 2004
Septic Systems	Use and maintain properly. Get tanks pumped every 3-5 years.	Scenic View Campground	
Source Protection Education	Distribute a source protection brochure which describes the sources of the campground's water and the necessity for protecting these sources	Scenic View Campground	
Groundwater under the direct influence of surface water	Determine whether well #2 is under the direct influence of surface water. Check if there is a hydraulic connection or conduct MPA testing.	Scenic View Campground	

## V. EMERGENCY RESPONSE PLANS

An emergency response plan describes the steps that would be taken if any or all of the sources from the two water systems became contaminated, declined in yield, or were lost for any reason. These plans are located in Appendices 6 and 7.

## VI. REFERENCES

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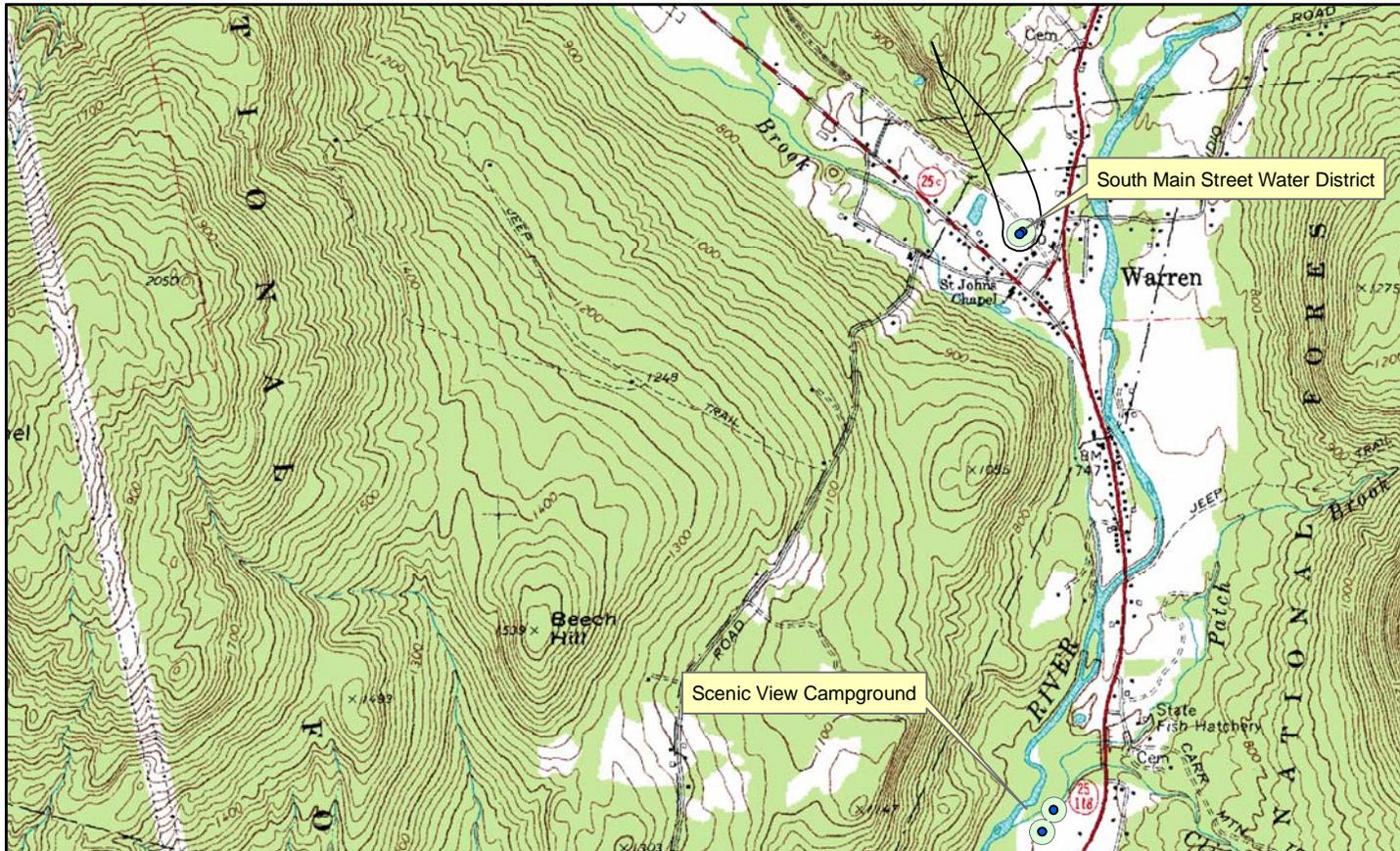
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Provan & Lorber, 2004b rev. Preliminary Engineering Study for the South Main Street Water District Warren, New Hampshire. Unpublished report, October 2004. Littleton, New Hampshire.

## VII. Figures

Figure 1. Locator Map



**Legend**

Water supply data from New Hampshire Department of Environmental Services.

Map prepared by:  
J.O. Palmisto, Northeast Rural Water Association  
10/23/04

- Withhold Protection Area
- Well
- Secondary Radius

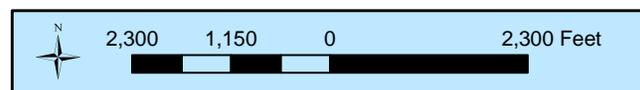
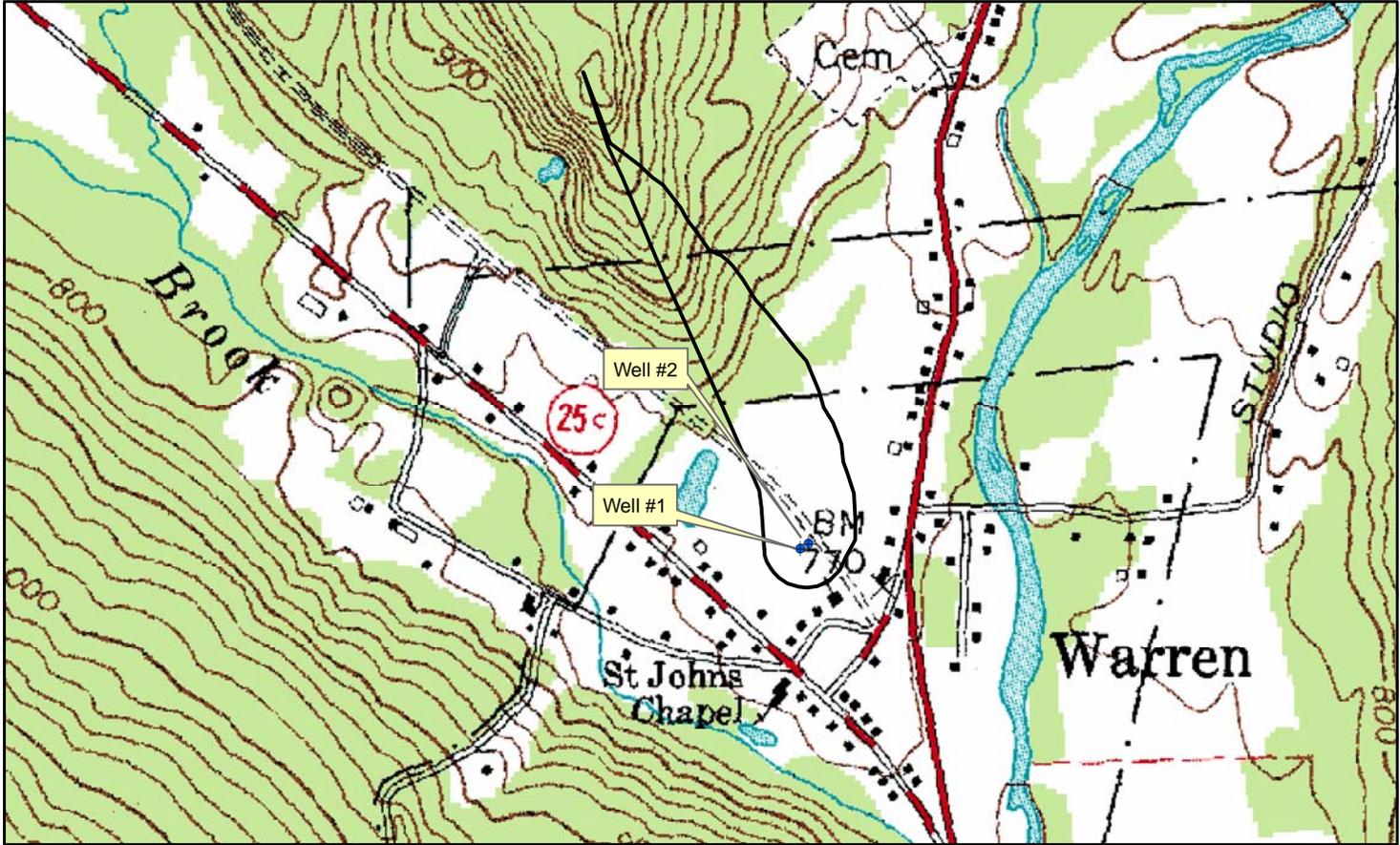


Figure 2. South Main Street Water District (WSID 2422010)



**Legend**

Water supply data from New Hampshire Department of Environmental Services.

Map prepared by:  
J.O. Palmiotto, Northeast Rural Water Association  
10/23/04

Well

Wellhead Protection Area

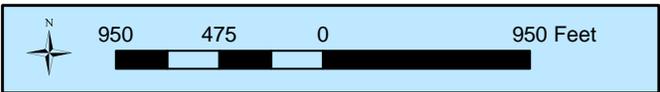
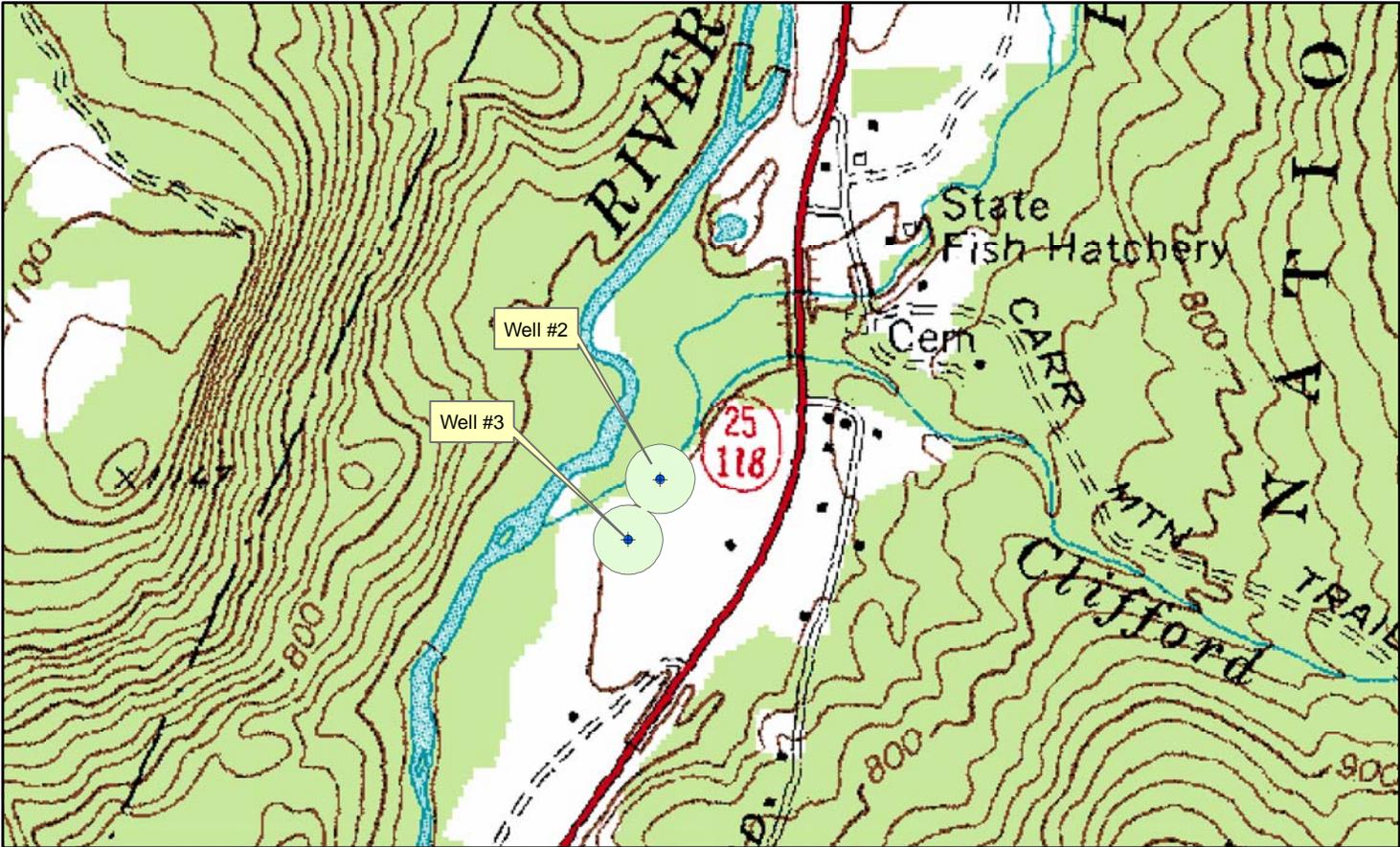


Figure 3. Scenic View Campground (WSID 2427040)



**Legend**

Water supply data from New Hampshire Department of Environmental Services.

Map prepared by:  
J.O. Palmiotto, Northeast Rural Water Association  
10/23/04

- Well
- Sanitary Protection Radius

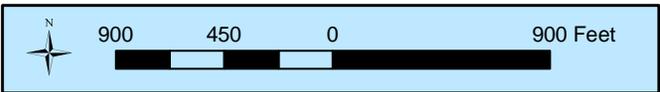
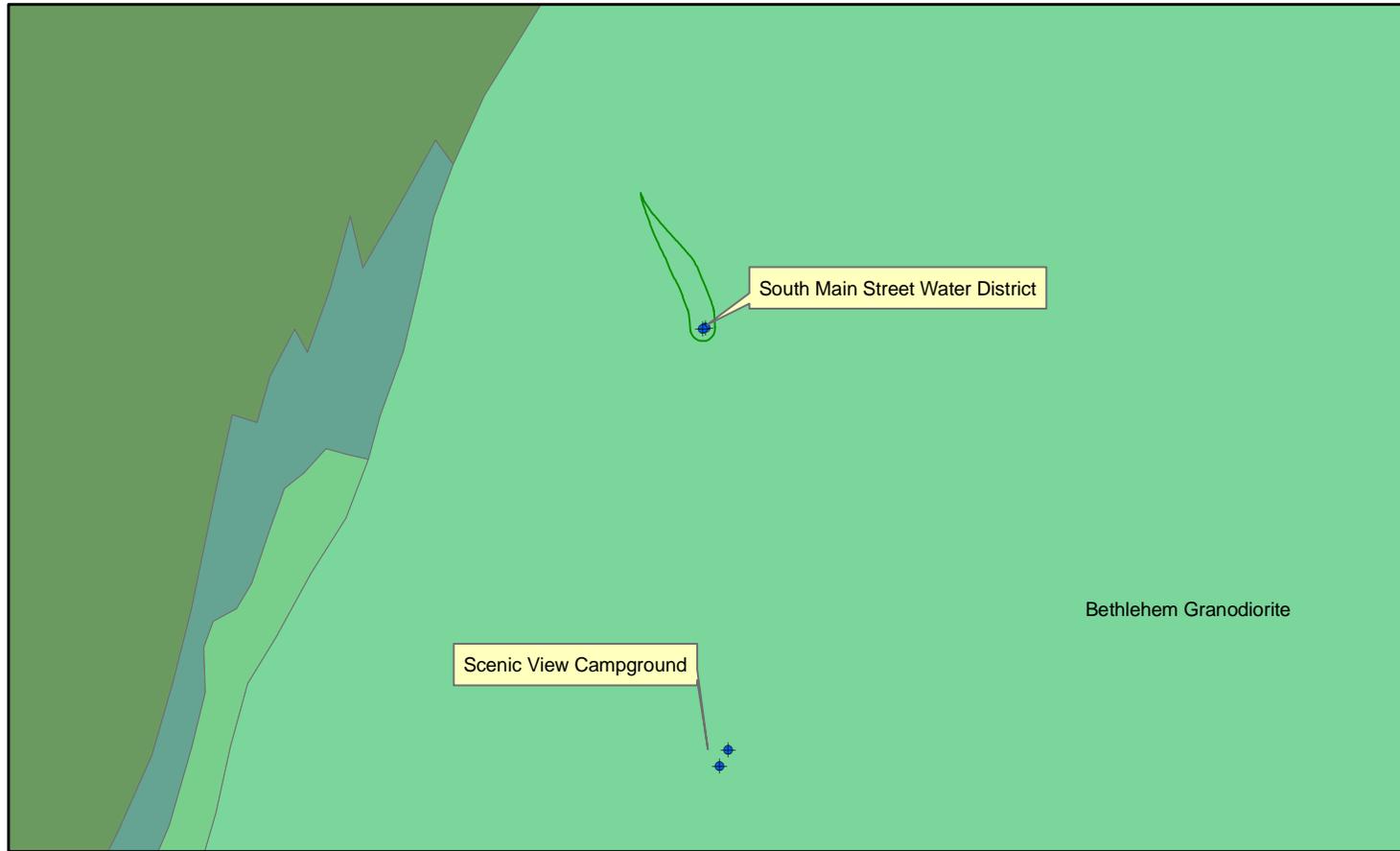


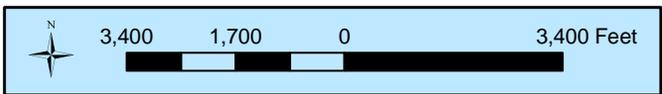
Figure 4. Bedrock Geology



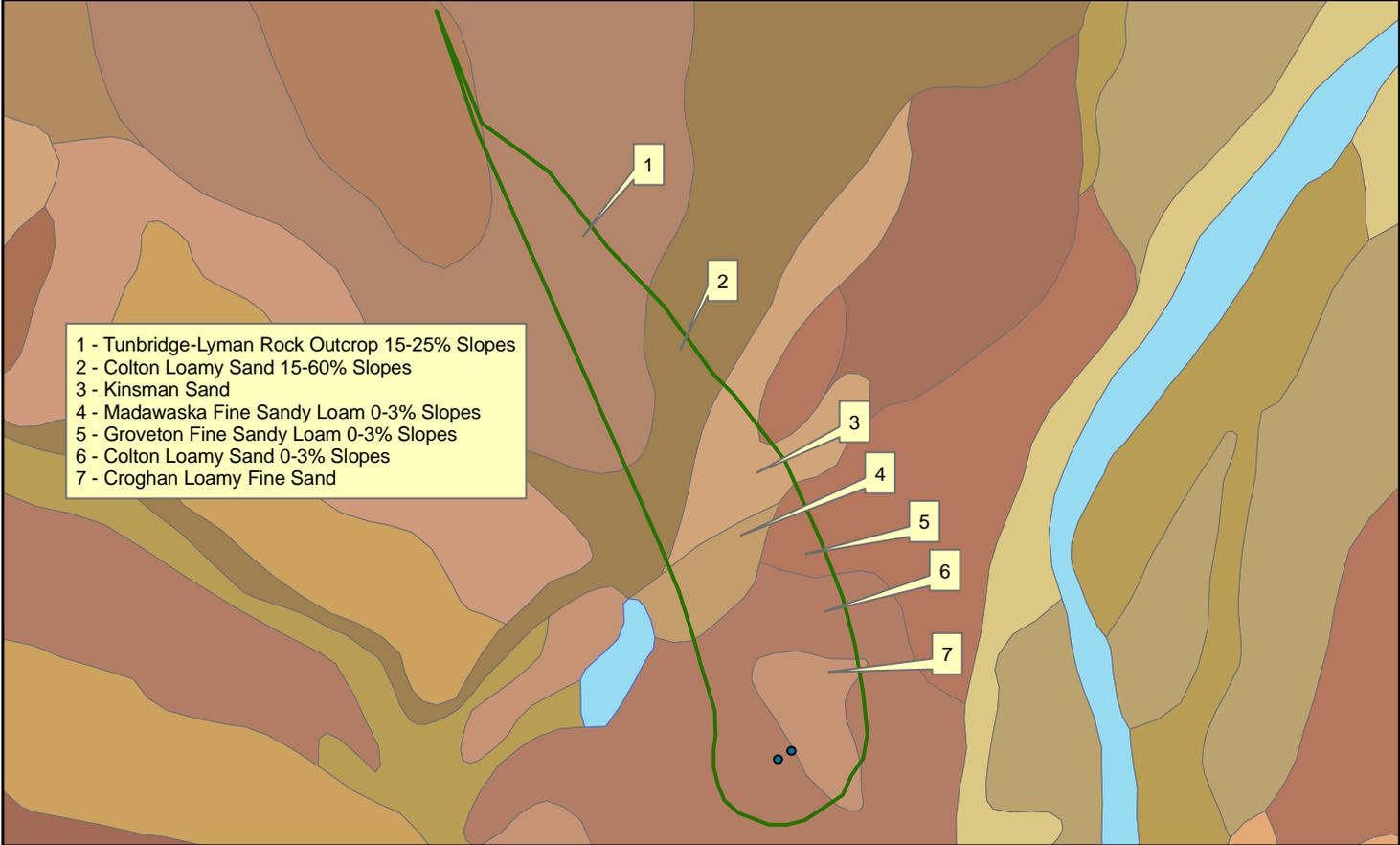
**Legend**

- Well
- Wellhead Protection Area

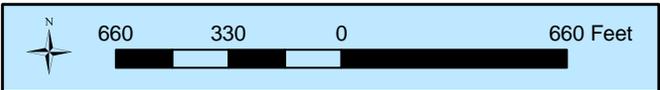
Water supply data from New Hampshire Department of Environmental Services.  
Map prepared by:  
J.O. Palmiotto, Northeast Rural Water Association  
10/23/04



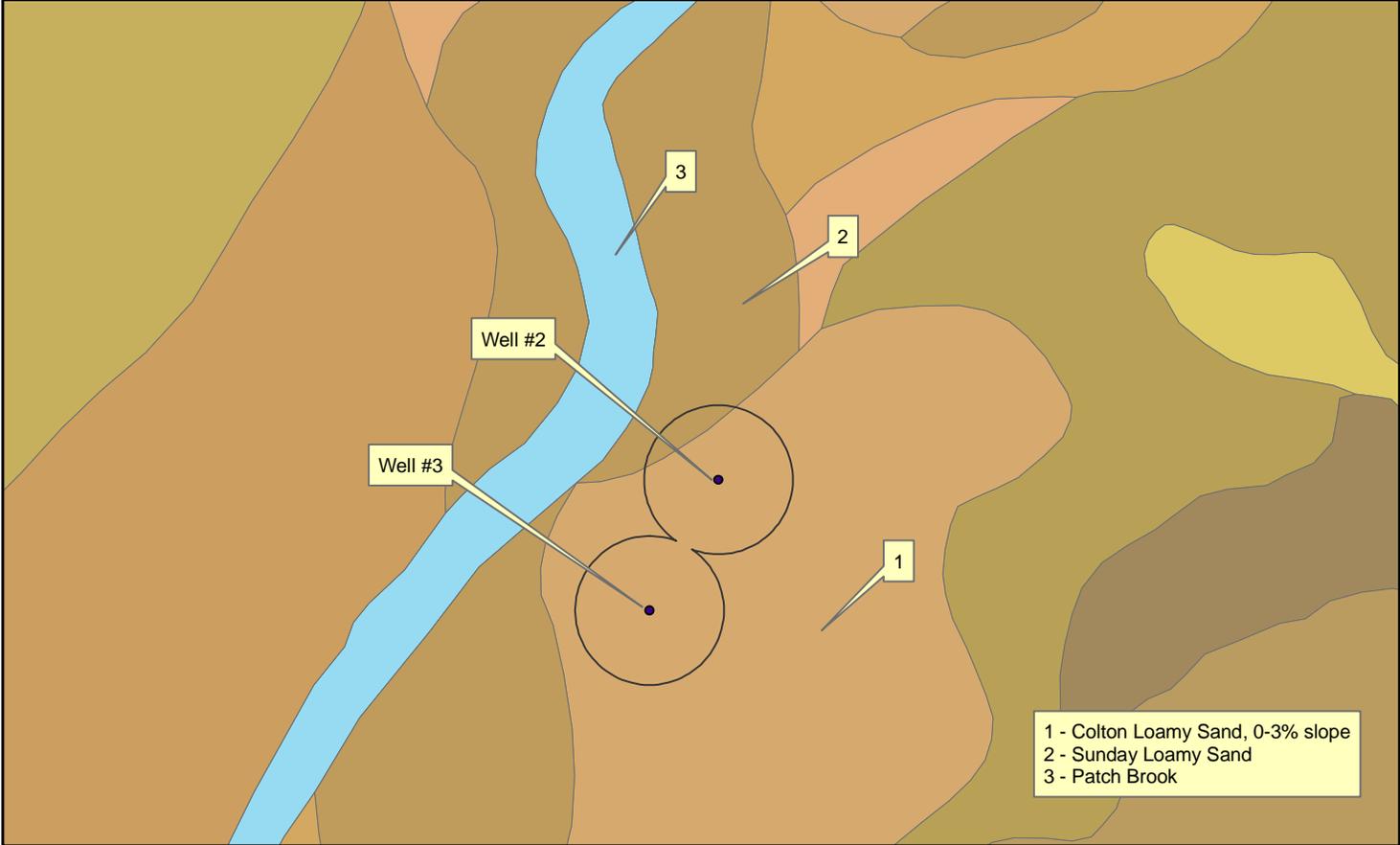
**Figure 5. Soil Map for South Main Water District**



Water supply data from New Hampshire Department of Environmental Services.  
Map prepared by:  
J.O. Palmiotto, Northeast Rural Water Association  
10/23/04



**Figure 6. Scenic View Campground: Soils and Surface Water**



**Legend**

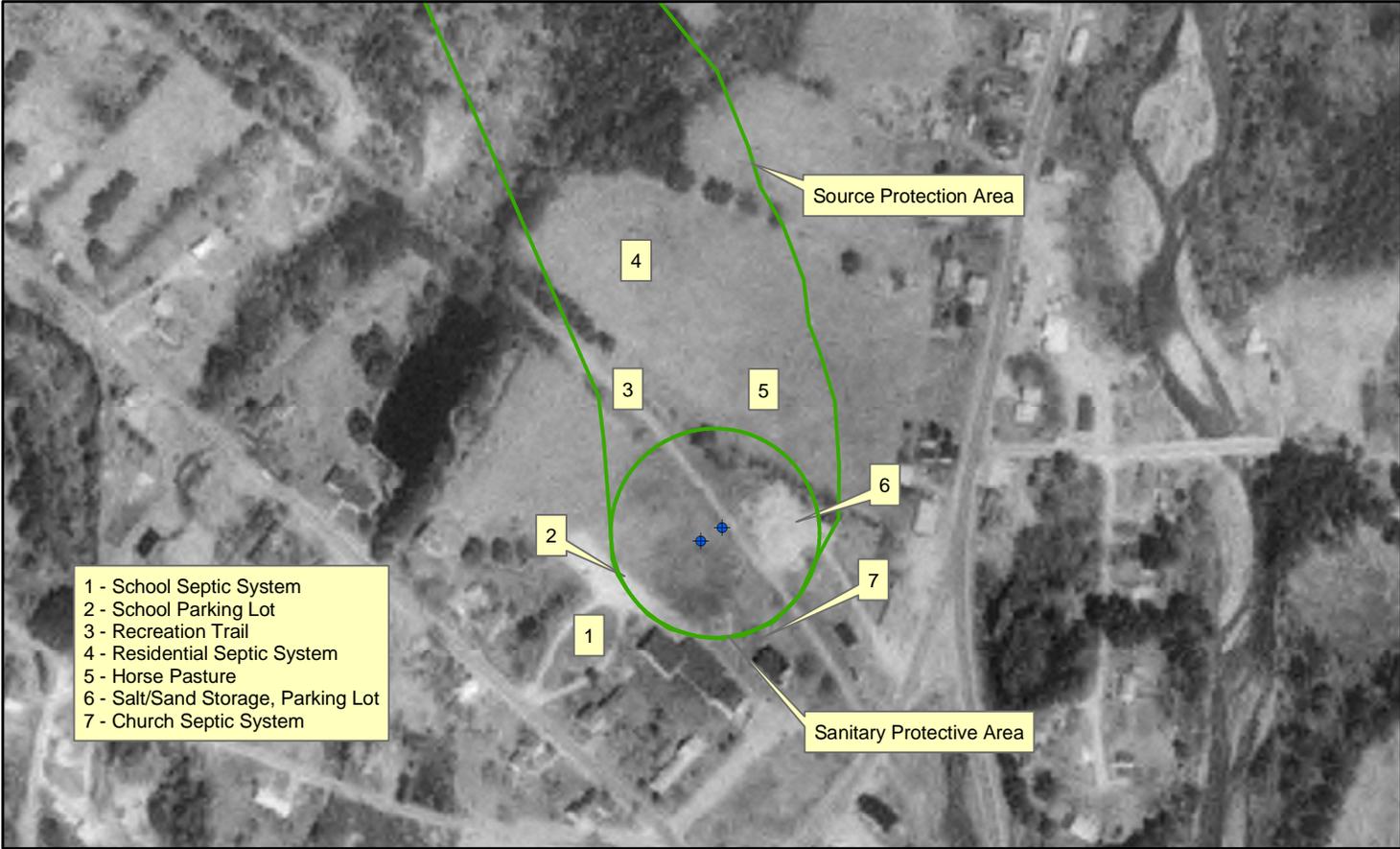
- Well
- svcdanrad

Water supply data from New Hampshire Department of Environmental Services.  
Map prepared by:  
J.O. Palmiotto, Northeast Rural Water Association  
10/23/04

N

440 220 0 440 Feet

**Figure 7. South Main Street Water District: Potential Contamination Sources**



- 1 - School Septic System
- 2 - School Parking Lot
- 3 - Recreation Trail
- 4 - Residential Septic System
- 5 - Horse Pasture
- 6 - Salt/Sand Storage, Parking Lot
- 7 - Church Septic System

**Legend**

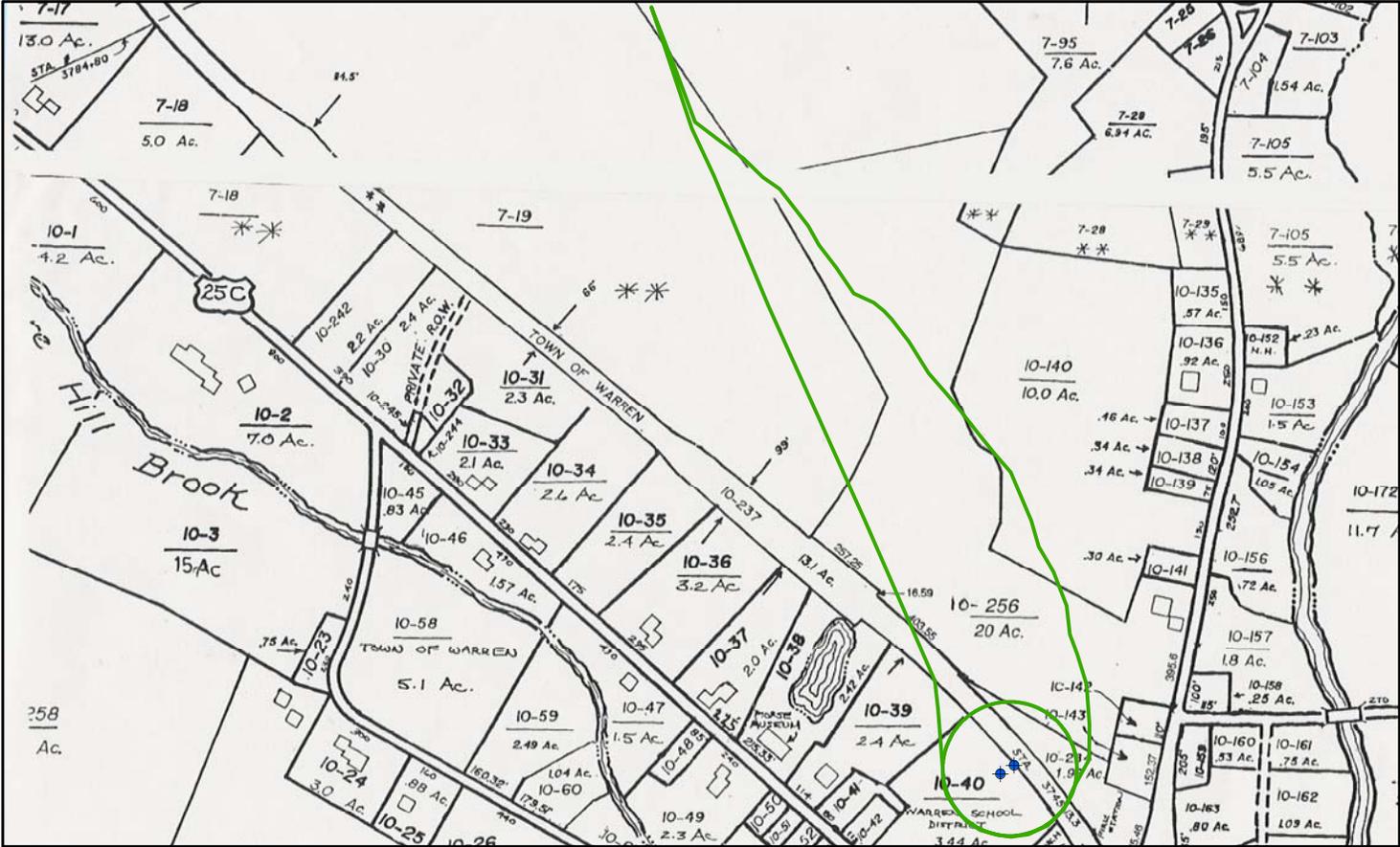
Well

Water supply data from New Hampshire Department of Environmental Services.  
 1992 Orthophoto.  
 Map prepared by:  
 J.O. Palmiotto, Northeast Rural Water Association  
 10/24/04

N

390      195      0      390 Feet

**Figure 8. South Main Street Water District: Parcel Map**



**Legend**

- Water supply data from New Hampshire Department of Environmental Services, 1992 Orthophoto.
- Map prepared by: J.O. Palmiotto, Northeast Rural Water Association, 10/24/04
- Well (represented by a blue diamond symbol)

Scale bar showing 600, 300, 0, and 600 Feet.

North arrow pointing up.

**Figure 9. Scenic View Campground: Potential Contamination Sources**



**Legend**

Well  
 Contaminated

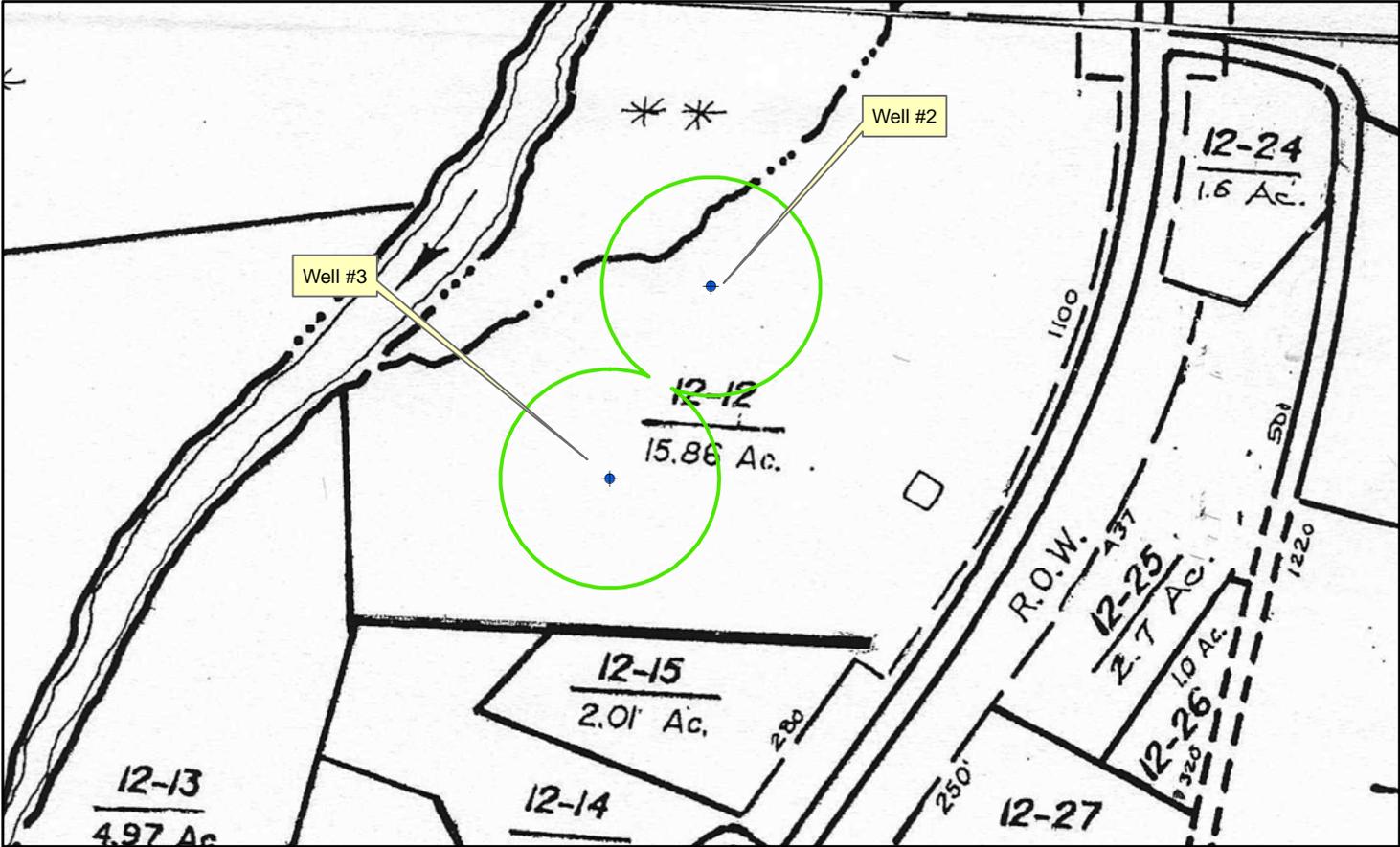
Water supply data from New Hampshire Department of Environmental Services, 1992 Orthophoto.

Map prepared by:  
 J.O. Palmiotto, Northeast Rural Water Association  
 10/24/04

N

300 150 0 300 Feet

Figure 10. Scenic View Camprground: Parcel Map



**Legend** Water supply data from New Hampshire Department of Environmental Services.

- ◆ Well
- Sanitary Radius

Map prepared by:  
J.O. Palmiotto, Northeast Rural Water Association  
10/24/04

N  
100 50 0 100 Feet

## **VIII. Appendices**

## Water Division

### NH Project WET

#### How to get WET in NH

Project WET is available to all educators through six-hour workshops. Workshop attendees participate in hands-on, minds-on activities both indoors and out. As a workshop participant you will receive:

- six hours of instruction
- [\*Project WET Curriculum and Activity Guide\*](#)
- supplemental water education materials
- a certificate for professional development clock hours
- a subscription to the [Project WEB](#), an environmental education newsletter for NH educators

WET workshops are conducted by trained facilitators throughout the year at various sites in New Hampshire. Interested schools, districts, and other organizations can request a WET workshop to be presented on-site. NH Project WET charges a nominal fee of \$25 per participant, and requires a minimum of 10 people.

Please view our [current workshop schedule](#) to find one in your area or contact the state coordinator, Jessica Brock, at (603) 271- 3303, [wet@des.state.nh.us](mailto:wet@des.state.nh.us) to set up a workshop for your organization.

## How to become involved

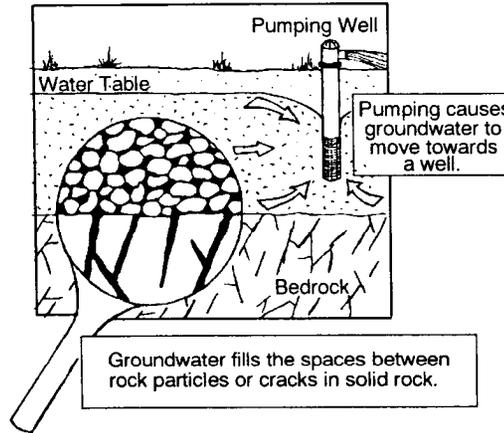
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- Serve on the Steering Committee
- Attend source protection meetings
- Help Identify land uses and possible sources of contamination
- Assist with public education and outreach efforts

## How to Protect Water Quality

---

- Recognize and manage possible sources of contamination.
- 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?



### South Main Street Water District

*is developing a*

### Source Water Protection Plan

*With assistance from*

### Northeast Rural Water Association

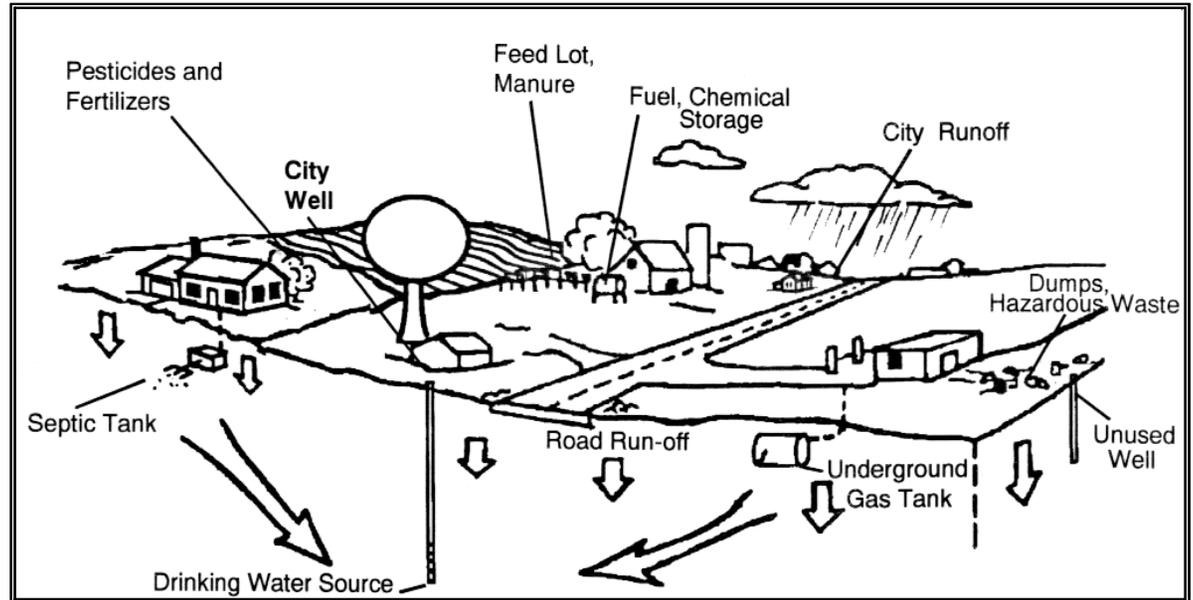
187 Saint Paul Street  
Burlington, Vermont 05401  
[www.neruralwater.org](http://www.neruralwater.org)



Warren Town Hall

## A community effort to protect public wells

New Hampshire's drinking water supplies are facing increasing threats from factors such as septic systems, MtBE in gasoline, leaking underground storage tanks, and stormwater runoff. Whether a public water system relies on ground water or surface water, protection of a water system's source is crucial. Source water is untreated water from streams, rivers, lakes, or underground aquifers, which is used to supply both public drinking water systems and private wells. In regions where several public water systems are close to one another, share the same aquifer or surface water supply, or are threatened by the same potential sources of contamination, it makes sense to form partnerships to work collaboratively on a unified plan to protect drinking water resources.



Examples of Source Water Contamination

**There are four public drinking water systems in Warren: South Main Street Water District, Glenclyff Improvement Coop, Moose Hillock Campground, and Scenic View Mobile Home Park and Campground.** Although water quality is currently fine, these sources draw water from groundwater aquifers and are vulnerable to contamination from land use activities. All of these public drinking water systems provide valuable services to Warren. For example, the South Main Street Water District supplies water to the elementary school, a medical center, 2 restaurants, 2 churches, a general

store, the Town Library, Town Offices, KP Hall and a number of residents.

### For more information contact:

Chuck Sackett  
 South Main Street Water District  
 (603) 764-9975  
[cnsjr2000@yahoo.com](mailto:cnsjr2000@yahoo.com)

Jennifer Palmiotto,  
 Source Water Specialist  
 1 800 55 NERWA ext 325  
[jpalmiotto@neruralwater.org](mailto:jpalmiotto@neruralwater.org)



**South Main Street Water District  
Letterhead**

Date

Dear Warren Department of Parks and Recreation:

A Source Protection Plan has been developed to protect the South Main Street Water District drinking water supplies. The purpose of the plan is to identify potential vulnerabilities of these water sources and to manage these in order to maintain the quality and quantity of our public drinking water sources. Copies of the plan are available at the Town Hall.

As you can see from the attached map, a recreation trail and a ball field are located close to our wells. We need your assistance in helping to protect the water quality of these important sources. You can help us protect the water by making sure that users of the ball field do not park within 200 feet of our wells. We have posted “no parking signs”. Additional support of this effort would be appreciated. In addition, we need assistance educating users of the recreational path. The Town recreational trail bisects the sanitary protection radius, passing close to the wells and wellhouse. This path is used by individuals riding snowmobiles, ATVs, horses, cars, motorbikes, and bicycles. The trail is also used by x-country skiers and dogsled teams. All of these uses pose potential risk to the water sources. For example, motorized vehicles have the potential to spill petroleum products. Dogsled teams can be a source of animal waste. Please help us educate users to be careful to prevent spills, to call the town hall to report spills, and to pick up after and dog waste.

Thank you for your support in helping us keep our drinking water safe and clean.

Sincerely,

XXXXXX

South Main Street Water District

Encl. Figure 2

**South Main Street Water District  
Letterhead**

Date

Dear Resident of Warren:

A Source Protection Plan has been developed to protect the South Main Street Water District drinking water supplies. The purpose of the plan is to identify potential vulnerabilities of these water sources and to manage these in order to maintain the quality and quantity of our public drinking water sources. Copies of the plan are available at the Town Hall.

**The purpose of this letter is to ask your cooperation in ensuring safe drinking water.** If we are all careful, we can protect our current and future drinking water resources from contamination.

Your property has been identified as being located within the area from which water flows to a public well. Within a wellhead protection area, land uses and/or naturally occurring materials may cause a public water system to become vulnerable to contamination. While naturally occurring contaminants can usually be controlled by treatment methods, property owners can manage potentially contaminating land uses.

Activities such as improperly disposing of household hazardous wastes (i.e. paint thinner) and motor oil, neglecting septic system maintenance, overuse of lawn care products, and the occurrence of home heating fuel spills all have the potential to contaminate a water source. Many of the negative impacts associated with these activities can be avoided with good management. For example, septic systems are designed solely for organic wastes and are not capable of treating household hazardous waste. Instead this waste should be disposed at a Household Hazardous Waste Collection Day. Septic systems should be pumped on a regular basis (approximately every 3-5 years) to avoid septic system failure. By following the information on the attached brochure, you can avoid activities which could threaten water quality. Please take the time to review the enclosed brochure. **We need your help to protect this valuable source of drinking water!**

A map showing the location of the wellhead protection area is enclosed. This letter is being sent to all property owners, whose property intersects with the wellhead protection area. Please feel free to contact me for additional information (603) XXX-XXXX.

Thank you for your cooperation in keeping Warren's drinking water safe.

Sincerely,

South Main Street Water District

Encl. Figure 2  
Brochure

**South Main Street Water District  
Letterhead**

Date

Dear State, Local and Regional Officials:

Enclosed is a map showing the Wellhead Protection Areas two Public Water Systems located in Warren, New Hampshire. A wellhead protection area consists of the surface and subsurface area from or through which contaminants are likely to reach a water supply source.

Land use activities located within these areas have the potential to adversely impact water quality of the associated wells. If the water that supplies our wells becomes contaminated, it may be impossible to treat the water so that it can continue to be used for drinking water. We are proactively trying to protect are water sources by implementing a source protection plan of which this letter of notification is a part.

We are contacting you to request your assistance in protecting these water supplies. There are a number of ways in which your agency may be able to help with protection that can help reduce the possibility of contamination of the water supply. For example, please keep us informed of any related land use decisions or permitting issues and involve us in the planning and decision process where it is deemed appropriate.

On behalf of the Town of Warren, I would like to thank you for your attention to this matter. If you have any questions or if I can be of some assistance please feel free to call me at (603) XXX-XXXX.

Sincerely,

XXXXXXXX

South Main Street Water District

Encl. Figure 1

**Appendix 6**

**Emergency Response Plan  
For  
South Main Street Water District**



State of New Hampshire  
DEPARTMENT OF ENVIRONMENTAL SERVICES  
6 Hazen Drive, P.O. Box 95, Concord, NH.03302-0095  
(603) 271-3503 FAX (603) 271-5171



July 27, 2004

Carl Wright  
312 NH Rte 25  
Warren, NH 03279

**Subject: Emergency Plan Feedback for South Main Street Water District,  
EPA#2422010, Warren**

Dear Public Water System:

On March 15, 2002, DES adopted Administrative Rule Env-Ws 360.14, which requires all community systems to have and maintain an emergency plan (plan). The first plan was due to DES by March 15, 2003. The rule also requires that the plan be reviewed annually by the system and updated as needed. Additionally, the plan will be a checklist item during each sanitary survey and lack of one will be a survey deficiency.

The purpose of an emergency plan is to establish a protocol for the water system to follow in case of an emergency. Developing a plan that will effectively meet the needs of a system in the event of an emergency is directly related to the quality of the input that goes into it. Accordingly, we have reviewed your emergency plan and feel that it meets the requirements of Env-Ws 360.14.

Even though **Section 8: Vulnerability Assessment** is optional for small systems we encourage your system to perform a vulnerability assessment (VA) if you haven't done so already. A vulnerability assessment differs from a plan in that it identifies potential causes of emergencies. As such, its purpose is emergency prevention while a plan's purpose is emergency response. Reducing a system's vulnerability to an emergency is a vital part of an emergency plan. A VA may also be able to justify security implementation needs, which are eligible for Source Water Protection Grant funds. Grant program information can be found on our website at [www.des.state.nh.us/dwspp/grants.htm](http://www.des.state.nh.us/dwspp/grants.htm). In the future there may be additional grant funding for those systems that have performed a VA.

To further improve your readiness in the event of an emergency, the plan should be updated as necessary (remember that people and contact information can change frequently) and rehearsed annually. Rehearsals are key to ensuring that everyone knows their response role. Another important aspect in readiness is being sure that all key decision makers know where the emergency plan is located and that the plan is easily accessible. You may want to consider including a list of all repair equipment, under the System Components section, that can be used in an emergency and what might need to be purchased, borrowed or rented, especially if the person who is in charge of the equipment isn't available during an emergency. Preparing written agreements with the bulk water haulers that you contacted and including them in your plan may also be useful. We recommend that all plans have a bright cover page so it is easy to locate. If your plan includes the DES Guide and separate attachments we suggest that you incorporate them together into a single streamlined document so that different sections aren't spilt up throughout the plan.

If your system needs assistance with updating your plan or would like help completing a VA you can contact one of the following free of charge on-site assistance providers:

Page 1 of 2

DES - Concord, NH 1-800-735-2064

◆Northeast Rural Water Association (NERWA)  
800-556-3792 or [info@neruralwater.org](mailto:info@neruralwater.org)

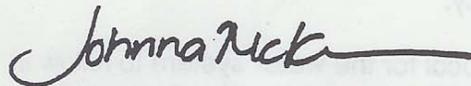
◆Bob Morency at RCAP Solutions, Inc. - Northeast Rural Community Assistance  
603-539-5803 or [rmorency@rhircap.org](mailto:rmorency@rhircap.org).

Also, for general guidance, emergency plan guides, sample plans and other self-help documents check out our Water System Security website at [www.des.state.nh.us/wseb](http://www.des.state.nh.us/wseb). NERWA also has emergency plan guides and VA tools specific for small water systems on their website at [www.neruralwater.org](http://www.neruralwater.org).

***Since a plan must be submitted to DES every 6 years the next plan is due March 15, 2009.***

Thank you for your attention to this important issue. If you have any questions please contact me at 603-271-7017 or [jmckenna@des.state.nh.us](mailto:jmckenna@des.state.nh.us).

Sincerely,



Johnna McKenna  
Water Supply Engineering Bureau

Enclosure: Water System Security Information Packet

# South Main Street Water District Emergency Plan

---

## Chain of Command Flow Chart (Section 2 of Guide)

**Commission Chair**  
*Carl Wright*  
764-5513

**System Operator**  
*Carl Wright*  
764-5513

**Commission**  
*Cary Wetherbee 764-6599*  
*Charles Sackett, Jr. 764-9975*

**Water System Users**

## **Chain of Command Responsibilities** (Section 2 of Guide)

### South Main Street Water District Commission Chair

1. Overall responsibility for managing a water emergency at South Main Street Water District.
2. Immediately notify the South Main Street Water District Water System Operator of the existence of a water emergency.
3. If necessary, immediately notify local and state emergency agencies, such as police, fire, ambulance, health, and DES Water Supply Engineering Bureau.
4. Be available as contact person for local and state emergency agencies.

### South Main Street Water District Water System Operator

1. Be available as necessary to provide hands-on knowledge of system components.
2. Be available as necessary to take water samples and to transport them to a certified laboratory for analyses.
3. Oversee and coordinate the return to normal operation.

### South Main Street Water District Commission members

1. Implement and oversee system user notification procedure.
2. Implement unique system user notification procedure.
3. Implement notification of abutting public water system.
4. Be responsible for and maintain up-to-date notification lists and notification tree contacts.
5. If necessary assist System Operator with boil order, alternate water efforts, and/or water conservation measures.

### South Main Street Water District Water System Users

1. Immediately notify the Commission Chair, or any available Commission member of the presence of a water emergency

## **NOTIFICATION PROCEDURES**

### Water System Users

The South Main Street Water District Commission members are responsible for implementing notification to the water system users. South Main Street Water District has approximately 45 service connections, or one connection per household. Notification will be accomplished through utilization of a "telephone" and a "mail" tree. According to prior arrangement, the Commission Chair will notify the members of the Board. The Commissioners will in turn notify a pre-set list of other households using telephone/mail until all 45 households have been notified. Each household will be responsible for notifying all other people who reside in that home. For households that cannot be reached by electronic communication, a notice will be posted on their door no more than 3 hours after notification begins. Notices will also be posted in common areas of the South Main Street Water District including the mailbox cluster. The Commission members are responsible for updating and maintaining the notification tree system.

### Unique Water System Customer

South Main Street Water District has one water system user at the time of the preparation of this Plan that requires potable water for medical reasons. This is the Mooselauke Medical Center 764-5704.

### Service/Repair

The South Main Street Water District Commission is responsible for implementing notification to service/repair contractors. A list of service/repair contractors and phone numbers is part of this emergency plan. The South Main Street Water District Commission Chair will use this list to telephone appropriate contractors. If necessary, other members of the Commission will assist. The Commission members are responsible for maintaining an up-to-date service/repair contractor list.

### Local and State Agencies

The South Main Street Water District Commission Chair is responsible for implementing notification to local and state agencies. A list of local and state agencies and phone numbers is part of this emergency plan. The Commission Chair will use this list to telephone appropriate agencies. If necessary, other members of the Commission will assist. The Commission members are responsible for maintaining an up-to-date local and state notification list.

### Abutting Public Water Systems

South Main Street Water District has no abutting public water systems.

## **System Components** (Section 4 of the Guide)

### System Equipment

1. Well #1 – 75' SW of pumphouse – 43,000 gallons per day maximum 24-hour production.
2. Well # 2 – 20' SW of Well #1 – 35,000 gallons per day.
3. Pumphouse located on the north side of the Warren Missile.
4. Storage tanks located in pumphouse.

## **System Plan**

South Main Street Water and Light District is a 30-year old system with plans that are stored in the pumphouse.

## **Boil Order** (Section 5 of the Guide)

Commission Chair will implement a boil order notification to South Main Street Water District users. If necessary, other members of the Commission will assist. South Main Street Water District will refer to the DES to make decisions requiring or canceling a boil order. South Main Street Water District will use the same telephone/email tree and notice posting system described earlier to implement a boil order and also to cancel a boil order.

## **Alternate Water Source** (Section 6 of the Guide)

### Bottled and Bulk Water

South Main Street Water District will utilize bulk truck water delivery to provide drinking water during a prolonged emergency. We discussed our water needs with the NH State Fishery who indicated that they would deliver bulk water to us in approximately 2 hours under normal driving conditions. Mt. Milk, Inc. of No. Haverhill (603) 787-6791 is located nearby, and also can be called on in an emergency.

### Abutting System

The South Main Street Water District Commission has no abutting system.

## **Water Conservation** (Section 7 of the Guide)

South Main Street Water District will implement the following water conservation measures as necessary in the event of a water system emergency:

1. Watering gardens, lawns and other landscaped areas will be restricted at a minimum or banned entirely.
2. Washing cars, trucks, boats, RVs, etc., will be restricted at a minimum or banned entirely.
3. Using water from a hose to rinse or clean sidewalks, driveways, decks, etc. will be restricted at a minimum or banned entirely.
4. Filling swimming pools will be restricted at a minimum or banned entirely.
5. Residents will be required to follow indoor water use restrictions adopted from DES Fact Sheet #WD-WSEB-26-2 that lists water efficiency practices for indoor domestic water use.
6. In a prolonged or dire emergency requiring reliance on bulk water, rationing will be implemented.

If an emergency necessitates shutting down our well, South Main Street Water District will implement discretionary water conservation measures during an emergency. For most emergencies, it will be adequate to implement conservation measures 1, 2, 3, and 4 as restrictions. The Commission Chair of the system will decide whether measures 1 through 4 will be restrictions or bans. Demand reductions would be achieved by implementing step 5. Water conservation options are more limited during a winter emergency although this is balanced by the lower overall daily demand.

In the event of a severe emergency necessitating the use of bulk truck delivery of water, measures 1 through 4 will be instituted as bans, and measure 6 will be put into effect. If that happens, measure 6 will supercede measure 5.

The Commission Chair will implement water conservation notification at South Main Street Water District. If necessary, other members of the Commission will assist the Chair and will use the same telephone/email tree and notice posting system described earlier to implement and cancel water conservation measures.

## **Return to Normal Operation** (Section 9 of the Guide)

The decision when to return to normal system operation will be made by the South Main Street Water District Commission Chair. The Commission Chair will make this decision with input from the DES if contamination is the cause of the emergency event. Certified Operator will have the responsibility of overseeing the return to normal operation of the system components.

Commissioners will assist the Certified Operator if necessary. The Certified Operator will do any additional water sampling that may be necessary to assess system conditions before returning to normal operation. All water system users will be notified using the same telephone/email tree and notice posting system described earlier when the system has been returned to normal operation.

## **Plan Readiness** (Section 10 of the Guide)

South Main Street Water District Water Commissioners have taken the following steps to ensure plan readiness:

1. Each person listed on our chain-of-command will keep a copy of this, and each annually updated plan in their residence.
2. A copy of our most recent plan will be kept in the Town Office
3. A copy of our most recent plan will be kept in our pumphouse.
4. The cover of our plan is brightly colored to make it easy to find.
5. An article about our plan will be placed in our newsletter so all our customers know it exists.
6. In all cases, earlier plans will be discarded after receipt of a newer plan.

Small System  
 CP Added to Database:  
*JWjm*  
*1/22/09*

# Public Water System Emergency Plan Guide

for community systems serving 500 or fewer people



New Hampshire Administrative Rule Env-Ws 360.14 requires community public water systems to have an emergency plan. Emergency plans are action steps to follow should a primary source of drinking water become contaminated or the flow of water disrupted. Emergency plans for community systems serving 500 or less people must be reviewed annually by the water system and an updated plan submitted to the DES at least every 6 years.

The purpose of this emergency plan guide is to help you understand and meet the basic standards for an emergency plan as set forth in Env-Ws 360.14. The purpose of an emergency plan is twofold: (1) establish a protocol for the management and staff of a water system to follow in case of an emergency, and (2) help a water system reduce its vulnerability to emergencies. Be sure to complete and return your emergency plan by 3/15/03. Fill in all unshaded boxes or circle "yes" or "no" where required. A sample completed plan is available for your further reference and assistance.

## Section 1. System Identification

System EPA Identification Number	2422010		
System Name	SOUTH MAIN STREET WATER DIST.		
Town	Warren		
Source ID/Type/Description/Well Yield from DES records	GRW1 / 126' SW of PH	28.70 gpm	
Source ID/Type/Description/Well Yield from DES records	GRW2 / 65' SW of PH	31.50 gpm	
Source ID/Type/Description/Well Yield from DES records		gpm	
Population Served and Service Connections from DES records.	200 people	42	connections
System Owner (the owner must be listed as a person's name)	Carl E. Wright		
Name, Title, and Phone Number of person responsible for maintaining this emergency plan.	Carl E. Wright Commissioner name and title	764-5513 phone	

## Section 2. Chain-of-Command

A water system must have and maintain an up-to-date organizational "chain-of-command" that identifies who is responsible for making decisions during an emergency. **The first response step** in an emergency is to inform the person at the top of your chain-of-command. This will reduce confusion and optimize response speed and effectiveness. Your emergency plan must include a chain-of-command flow chart listing names, titles, and day/night phone numbers of the key people who will be responsible for managing an emergency at your system. Additionally, the system must determine the role of each key person during an emergency. Please attach your chain-of-command flow chart and a brief description of each person's responsibilities during an emergency.

## Section 3. Notification

It may be necessary to quickly notify other parties during an emergency situation. Other parties might include your water system users, health officials, safety officials, regulatory personnel, and service/repair providers. Please fill out the lists on the next page. The following lists are not intended to be inclusive – they may be adapted to your specific needs, but they must be thorough. Attach any additional listings that you consider appropriate. The level of effort needed for notification will vary greatly depending on the size of the system and the nature of the emergency. All systems should plan ahead how you will accomplish notification. Also attach your notification procedure, i.e. how you will accomplish notification.

**Local Notification List**

Fire Dept day 911	Fire Dept night 911
Police Dept day 911	Police Dept night 911
Ambulance service day 911	Ambulance service night 911
Health Office day Warren Town offices 764 5780	Health Office night 911
Water System Operator day 764 5513	Water System Operator night 764 5513
Neighboring Water System day N/A	Neighboring Water System night N/A
Neighboring Water System day N/A	Neighboring Water System night N/A
Other NH Fish Hatchery 764 8593	Other
Other Moose Lake Medical Center 764 <del>9978</del> 5704	Other
Other Ron WITCHER 764 9978	Other

**State Notification List**

State Police day 1-800-525-5555	State Police night 1-800-525-5555
Water Supply Engineering Bureau day 271-3139 or 271-3503	Water Supply Engineering Bureau night 271-3139 or 271-3503
Office of Emergency Management day 271-2231 or 1-800-852-3792	Office of Emergency Management night 271-2231 or 1-800-852-3792
Public Health Services day 271-4496	Public Health Services night 271-4496
Other Dig SAFE 1-800-314-5723	Other
Other	Other

**Service/Repair Notification List**

Electrician day CARL WRIGHT 764 5513	Electrician night SAME
Electric Utility day NH ELEC. COOP 576-1800	Electric Utility night 576-1800
Plumber day RUSSELL BLEDGETT 786 9361	Plumber night SAME
Pump Specialist day RUSSELL BLEDGETT 786-9361	Pump Specialist night SAME
Soil Excavator day RON WITCHER 764 9447	Soil Excavator night SAME
Equipment Rental day RANDS (PLYMOUTH) 576 1000	Equipment Rental night SAME
Other Provan and Lamb 444-6301	Other
Other	Other
Other	Other

**Notification Questions**

Does this system have a specific location(s) where up-to-date notification information, including phone numbers of key officials and services, is kept at all times?	<input checked="" type="radio"/> Yes	No	1
Are the key decision-makers of this system clearly aware of where to quickly find this information?	<input checked="" type="radio"/> Yes	No	2
Are the key decision-makers of this system familiar with your notification procedures?	<input checked="" type="radio"/> Yes	No	3
If you circled "no" to line 1, 2, or 3, when will the situation be corrected?			4

**Unique Water System Users**

In an emergency your water system may have to provide priority notification to users with unique or special water needs. Unique or special users would include nursing homes, elderly housing facilities, hospitals, or individuals with serious medical concerns or mobility limitations. Water systems must identify and maintain an up-to-date list of service customers with unique water needs and make provisions for safe and adequate water supply to them.

Does this system have service customers with unique water needs?	<input checked="" type="radio"/> Yes	No	5
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If you circled "Yes" on line 5, attach your list of unique service customers and a brief description of how you will notify them and provide for their water needs.

**Section 4. System Components**

It is essential that a water system have accurate up-to-date information about its facilities, equipment, and design. This information will help facilitate repair in case of an emergency and will also be valuable in assessing system vulnerability to an emergency.

**System Equipment**

Please attach an up-to-date list of your system's primary features. List at least each active well, each operable inactive well, total production capacity of each active and operable inactive well, each storage tank, capacity of each storage tank, each treatment facility, and each pump station. If you have an atmospheric storage tank(s), indicate whether or not it is equipped with a capped and lockable fill pipe to accommodate tank truck water delivery. A DES fact sheet on atmospheric storage tank fill pipes is enclosed. Please note that Env-Ws 372.23 requires that all atmospheric storage tanks be equipped with a capped and lockable fill pipe by January 01, 2007.

Does this system have an atmospheric storage tank? If yes, how many?	<input checked="" type="radio"/> Yes	No	1 # tanks	6
Are your atmospheric storage tank(s) equipped with a fill pipe for supplied water?	<input checked="" type="radio"/> Yes	No	n/a	7

If you answered "No" to line 7, please indicate in the box below when your atmospheric storage tanks will be equipped with fill pipes for tank truck water delivery.

	8
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**System Plan**

Please attach an up-to-date, accurate, plan of your system that shows at least the locations of all individual wells (active and inactive), pump stations, water treatment facilities, storage tanks, distribution lines, and key shutoff points for isolating sections of your distribution system. The plan must be easily legible and in a workable scale.

### System Design

During an emergency, a water system may need to reduce its demand or utilize its excess capacity to continue to provide safe water to its users. Please attach a brief discussion of this system's ability to isolate sections of the distribution system.

What is the total production capacity of this system?	83,500 gallons per day	9
What is the total storage capacity of this system?	7,000 gallons	10
What is the average daily demand of this system?	12,000 gallons per day	11
What is the maximum daily demand of this system?	16,000 gallons per day	12
Divide total storage capacity by average daily demand.	.6 days	13

### Section 5. Boil Order

An emergency could create the potential that your well has been contaminated with microbiologic pathogens. The presence of certain pathogens in drinking water is a significant health concern. If that happens it may be necessary to implement a boil order. Include a brief description of how this system would implement a boil order. Contact the Water Supply Engineering Bureau at 271-3139 for guidance on boil orders. A DES fact sheet on boil orders is attached for your reference.

### Section 6. Alternate Water Source

An emergency may necessitate obtaining water from an outside source to meet your basic water needs. All public water systems should plan ahead how it will provide alternate safe water during an emergency. Attach this system's contingency plan for providing alternate water considering each of the following three options.

#### Bottled and Bulk Water

If you do not have an atmospheric storage tank, bulk water delivery from a tank truck is not an option. A list of suppliers of bottled and bulk sources of water is attached. Keep in mind the storage tank fill cap requirement discussed in Section 4, System Equipment.

Have you discussed your potential water needs with at least 2 suppliers?	<input checked="" type="radio"/> Yes <input type="radio"/> No	14
Approximately how long will it take for bottled or bulk water to reach this system?	2 hours	15

#### New Source

An emergency may necessitate that your system develop a new source of water or use an inactive source. If your alternate water plan includes using an inactive source, you may have to consider your treatment capabilities.

#### Tie-in to Adjacent Water Supply System

Some water systems are situated in close proximity to one or more other water systems.

Are any water systems situated adjacent to this system?	Yes <input checked="" type="radio"/> No	16
Have you discussed the feasibility of connecting to another system with representatives of that system(s)?	Yes <input checked="" type="radio"/> No	17
Is it feasible for this system to connect to an adjacent system? If yes, attach a general description of how you would make the connection.	Yes <input checked="" type="radio"/> No	18

## Section 7. Water Conservation

Water conservation can be an effective means of coping with minor losses of source capacity. Describe how this system could use conservation measures during an emergency. The assessment should discuss the potential of this system to save significant quantities of water through conservation measures, and a prioritization of categories of water use that are marginal or nonessential in times of water shortage.

## Section 8. Vulnerability Assessment (Optional)

Env-Ws 360.14 does not require you to submit a vulnerability assessment as discussed in this section. However, we encourage you to consider such an assessment as a valuable management/planning tool for your system. Consequently, we ask that you voluntarily submit the information requested in this section with your completed emergency plan. We also ask that you update this information in conjunction with your entire emergency plan.

### Preventable Emergencies

Some causes of emergencies are preventable. Age and obsolescence of equipment, poor maintenance, poor system design, lack of spare parts, high risk or ill advised land usage near a water source, and lack of source protection efforts are all preventable factors that can cause water system emergencies. Reducing a system's vulnerability to an emergency is a vital part of an emergency plan. Please list and briefly describe any vulnerable areas of your system that need correction or improvement. Consider each supply, storage, and distribution component of your system when you do this, being sure to include each of the primary features of your system that were listed in Section 4, System Equipment. Also consider the land usage near your water source(s) when you describe your vulnerable areas. High-risk land usage near your water source(s) may be preventable through source protection measures. For example, relocating a septic system out of a sanitary radius is a grant eligible activity.

At this time, does this system have any vulnerable component areas that need correction or improvement?	Yes	<input checked="" type="radio"/> No	19
At this time, does this system have any land usage concerns that could be minimized through source protection measures?	Yes	<input checked="" type="radio"/> No	20
Does this system participate in the sampling waiver program?	Yes	<input checked="" type="radio"/> No	21
Has this system received its Source Water Assessment Report from the DES? If so, you should refer to this report when compiling your vulnerability assessment.	Yes	<input checked="" type="radio"/> No	22

## Section 9. Return to Normal Operation

Include a description of the follow-up actions and staff responsibilities that this system would undertake to return to normal operation.

## Section 10. Plan Readiness

In order for this plan to be useful, people must know the plan exists, they must know where to quickly find the plan, and they must understand their role during an emergency.

Do the key representatives of this system know about this emergency plan?	<input checked="" type="radio"/> Yes	No	23
Has this system clearly defined for each key person what his or her responsibilities will be during an emergency, i.e., does each key person clearly understand their role?	<input checked="" type="radio"/> Yes	No	24
Has this system rehearsed this emergency plan within the last two years?	Yes	<input checked="" type="radio"/> No	25
For property owner associations: will each successive group of officers be informed of the existence of, and briefed on, all aspects of this emergency plan?	Yes	No	<input checked="" type="radio"/> N/A

### Section 10. Emergency Plan Requirements

Env-Ws 360.14 requires that community public water systems have an emergency plan. Emergency plans for community systems serving 500 or less people must be reviewed annually by the water system and an updated plan submitted to the DES at least every 6 years. Additionally, the plan must be made available for review during each scheduled sanitary survey. When the DES receives your plan it will be reviewed and entered into our computer database. We strongly suggest that your plan have the same organizational format as this guide. This emergency plan guide is available through the DES website at [www.des.state.nh.us](http://www.des.state.nh.us). Click on Water resources and Quality, then Water Supply Engineering. Every system will be different in terms of the resources needed to develop or update their emergency plan. Grant funding is available each fall for this and other source water protection activities.

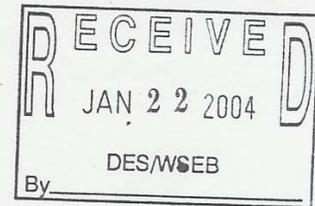
### Section 11. Signatures

Representatives of this water system who helped complete this emergency plan must sign and date below. The signature(s) attests that all the information provided herein is true and accurate. At least one signature is required, including that of the system owner.

system representative/title	<i>Carl Wright</i>	date	<i>1/20/04</i>
system representative/title		date	
system representative/title		date	

**Return This Filled-in Guide and Your Complete Emergency Plan By Your Submittal Deadline To:**

Johnna McKenna  
 Department of Environmental Services  
 PO Box 95, 6 Hazen Drive  
 Concord, NH 03302-0095



**Checklist of Items to Return** (check the box next to each attached item)

Completed and Signed Emergency Plan Guide	<input type="checkbox"/>	Discussion of Alternate Water Source Options (Section 6)	<input type="checkbox"/>
Chain-Of-Command Flow Chart and List Of Responsibilities (Section 2)	<input type="checkbox"/>	Assessment of Water Conservation (Section 7)	<input type="checkbox"/>
Filled out Notification Lists, Description of Notification Procedure, and List of Unique System Users (Section 3)	<input type="checkbox"/>	Vulnerability Assessment and Improvement Plan – Voluntary Submittal (Section 8)	<input type="checkbox"/>
List of Equipment, System Plan, and Description of Distribution System Shutoff Capability (Section 4)	<input type="checkbox"/>	Description of Return to Normal Operation (Section 9)	<input type="checkbox"/>
Boil Order Discussion (Section 5)	<input type="checkbox"/>		<input type="checkbox"/>

**Appendix 7**  
**Emergency Response Plan**  
**For**  
**Scenic View Campground**

## Sample Emergency Plan



### For Community Systems Serving 500 or Fewer People

This sample emergency plan (plan) is intended to illustrate a general plan that is well suited to public water systems serving 500 or fewer people. The content of this plan is based on the Emergency Plan Guide (Guide) document for small systems that is available from the Department of Environmental Services (DES). It is also based on New Hampshire Administrative Rule Env-Ws 360.14, which requires all community public water systems in this state to have an emergency plan. **You are not required to use this sample plan – it is simply a tool to help you write your own plan. Since each system is different this plan merely offers ideas, which may or may not apply to your system. If you have already developed a plan of your own you may submit that, as long as it includes the minimum requirements and signatures.** Our sample plan refers to a fictional water system called Nice Mobile Home Park (MHP). Instructions are in regular font and sample plan sections are in *italics*.

It is important to remember that when you submit your plan you also need to submit a completed and signed Guide. Consequently, the instructions herein also apply to the Guide.

### System Identification (Section 1 of the Guide)

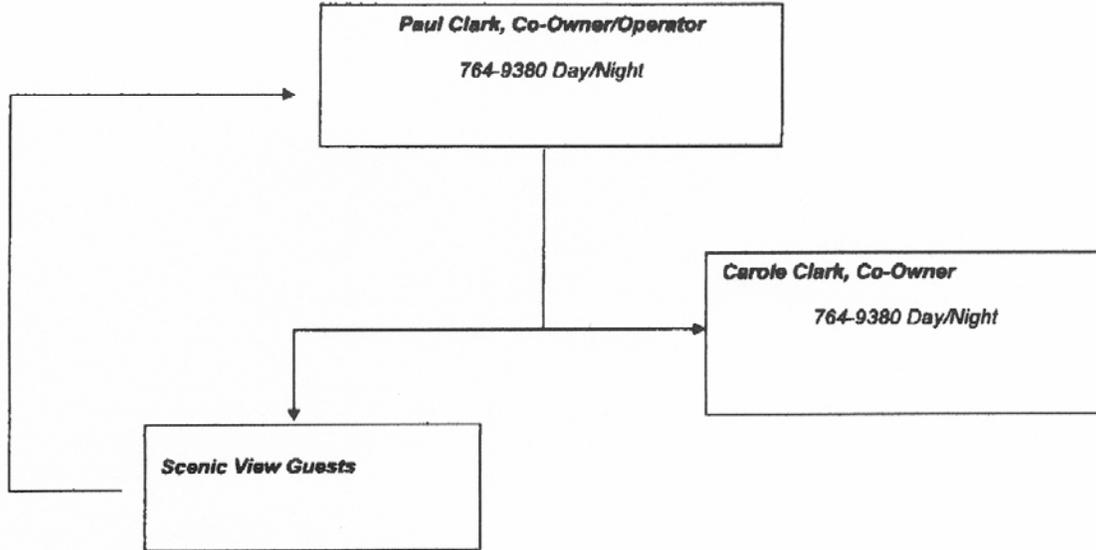
For system identification, simply fill out Section 1 of the Guide as shown below. Information about your system is available through the DES website at [www.des.state.nh.us/wseb](http://www.des.state.nh.us/wseb) under *One Stop Data Retrieval: Public Water System Information*, or call the DES at 271-7017.

System Identification Table – Guide Page 1

System EPA Identification Number	2993020		
System Name	<i>Scenic View Campground</i>		
Town	<i>Warren</i>		
Source ID/Type/Description/Well Yield from DES records	<i>002 GPW 500 feet west of Route 25</i>		<i>25</i>
Source ID/Type/Description/Well Yield from DES records	<i>003 GPW 300 feet from campground office</i>		<i>10 gpm</i>
Source ID/Type/Description/Well Yield from DES records	<i>001 Dug well (inactive) southern end of property</i>		<i>Unk gpm</i>
Population Served and Service Connections from DES records.	<i>248</i> people	<i>98</i> connections	
System Owner (the owner must be listed as a person's name)	<i>Carole and Paul Clark</i>		
Name, Title, and Phone Number of person responsible for maintaining this emergency plan.	<i>Carole and Paul Clark, Owners</i>		<i>764-9380</i> phone

### Chain of Command Flow Chart (Section 2 of Guide)

Your plan must include a Chain-of-Command flow chart such as the fictional one for Nice MHP shown below. On your chart include all the key people who will be responsible for managing an emergency at your water system. The person shown at the top has overall responsibility for managing an emergency at your system. The Chain of Command (section 2) and Notification Procedures (section 3) are an important part of your plan.



## **Chain of Command Responsibilities** (Section 2 of Guide)

Your plan must include a brief description of each key person's responsibilities during an emergency. Listing the responsibilities, such as shown below for Nice MHP is a recommended way of doing this. Be sure to include everyone shown on your chain-of-command flow chart and submit your list with the completed Guide. Please note that each system is different and so are each systems responsibilities. Therefore, the list below may or may not include all of the responsibilities for each person in your system.

### Paul Clark, Co- Owner/Operator

1. Overall responsibility for managing a water emergency at Scenic View Campground.
2. If necessary, immediately notify local and state emergency agencies, such as police, fire, ambulance, health, and DES Water Supply Engineering Bureau.
3. Be available as contact person for local and state emergency agencies.
4. Implement the system user and service/repair notification procedures.
5. If necessary, implement the boil order, alternate water procedures, and/or water conservation measures.
6. Be available as necessary to provide hands-on knowledge of system components.
7. Be available as necessary to provide specialized repair of system components such as pumps, water treatment devices and valves.
8. Be available as necessary to take water samples and to transport them to a certified laboratory for analyses.
9. Oversee and coordinate the return to normal operation.

### Carole Clark, Co-Owner

1. Assist with service/repair efforts.
2. Immediately notify the Operator of the existence of an emergency.
3. Assist as necessary with service/repair efforts.
4. Assist as necessary water system operator with return to normal operation procedures.
5. If necessary, oversee and implement boil order and alternate water procedures plus water conservation measures.
6. Implement and oversee system user notification procedure.
7. Implement unique system user notification procedure.
8. Be responsible for and maintain up-to-date notification lists and notification tree contacts.

### Campground Guests

1. Immediately notify Co-owner(s) of the presence of a water emergency.

### Notification Procedures (Section 3 of Guide)

A good emergency plan covers 3 aspects of notification: (1) delegating the responsibility to oversee and accomplish notification; (2) establishing the process of notification, i.e. the procedure you will use to quickly disseminate information to appropriate parties; and, (3) assembling lists of appropriate parties to contact. This section covers step 2 - writing out your notification procedure, which is an important step in the notification process. In our sample, a telephone/email tree is the basic means of accomplishing notification. When you write your plan please keep in mind that the larger the system, the more complicated rapid notification becomes. Therefore, the notification procedure you choose should be effective for the size of your system. Your submitted plan must include a written notification procedure. Keep in mind that a system may identify several possible notification list scenarios as illustrated below for Nice MHP.

#### Water System Users

The Co-Owners are responsible for implementing notification to the water system users. Scenic Campground has approximately 98 service connections. Notification will be accomplished by leaving notices at the door of each motor home and posting notices in the recreation room.

#### Service/Repair

Paul Clark, Campground Co-Owner/Operator is responsible for implementing notification to service/repair contractors. A list of service/repair contractors and phone numbers is part of this emergency plan. The Co-Owners are responsible for maintaining an up-to-date service/repair contractor list.

#### Local and State Agencies

Carole Clark is responsible for implementing notification to local and state agencies. A list of local and state agencies and phone numbers is part of this emergency plan. She will use this list to telephone appropriate agencies.

### Notification Lists (Section 3 of Guide)

A good plan will include up-to-date notification lists. The notification lists on page 2 of the Guide are only a reference. Adapt them to meet your system needs. **Be thorough, and remember to update your lists as necessary and on an annual basis.**

#### Local Notification List

Notification List Boilerplates - Guide Page 2

Fire Dept day Dave Riel 764-8524	Fire Dept night Dave Riel 764-8524
Police Dept day Warren Davis (S-F) 764-9350 Warren Davis (M-F) 764-5538	Police Dept night Warren Davis 764-9350
Ambulance service day 911	Ambulance service night 911
Health Office day Mount Moselauke Health Center 764-5704	Health Office night M.M. Health Center 764-5704
Water System Operator day Paul Clark 764-9300	Water System Operator night Paul Clark 764-9300
Neighboring Water System day	Neighboring Water System night
Other	Other
Other	Other

Small System Sample Emergency Plan – Page 5

**State Notification List**

State Police day 1-800-525-5555	State Police night 1-800-525-5555
Water Supply Engineering Bureau day 271-3139 or 271-3503	Water Supply Engineering Bureau night 271-3139 or 271-3503
Office of Emergency Management day 271-2231 or 1-800-852-3792	Office of Emergency Management night 271-2231 or 1-800-852-3792
Public Health Services day 271-4496	Public Health Services night 271-4496
Other	Other

**Service/Repair Notification List**

Electrician day Brian Weeks 764-5526	Electrician night Brian Weeks 764-5526
Electric Utility day NH Elect. Coop. 1-800-699-2007	Electric Utility night NH Elect. Coop. 1-800-699-2007
Plumber day Russ Blodgett 786-9361	Plumber night Russ Blodgett 786-9361
Pump Specialist day " " "	Pump Specialist night " " "
Soil Excavator day Jason Newton 764-9200	Soil Excavator night Jason Newton 764-9200
Equipment Rental day	Equipment Rental night
Other	Other
Other	Other
Other R. Newton Septic System Pumping 764-9200	Other
Other	Other

After you complete your notification lists, don't forget to answer the Notification and Unique Water System Customer Questions on page 3 of the Guide as shown below.

**Notification Questions**

Notification Questions – Guide Page 3

Does this system have a specific location(s) where up-to-date notification information, including phone numbers of key officials and services, is kept at all times?	Yes	No	1
Are the key decision-makers of this system clearly aware of where to quickly find this information?	Yes	No	2
Are the key decision-makers of this system familiar with your notification procedures?	Yes	No	3
If you circled "no" to line 1, 2, or 3, when will the situation be corrected?	N/A		4

Unique Customer Question – Guide page 3

Does this system have service customers with unique water needs?	Yes	No	5
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## System Components (Section 4 of the Guide)

A good emergency plan will include a list of your system's primary features. Refer to the section headed System Equipment on page 3 of the Guide for the features you should include at a minimum. It is a good idea to also list important repair equipment that you may have such as excavation equipment or significant spare parts. If you have an atmospheric storage tank you will need to indicate whether or not it is equipped to accept truck delivery of bulk water and you will need to answer the questions about atmospheric tanks on page 3 of the Guide. Below are a typical list of system components and the atmospheric tank questions for our sample plan.

### System Equipment

1. Gravel Packed Well #001 – Inactive
2. Bedrock Well #002 – 25 GPM, 500 feet west of Route 25
3. Bedrock Well #003 – 10 GPM
4. Single pumphouse located 75 feet west of lot 14, at end of dirt access road.
5. One 20,000-gallon atmospheric storage tank equipped with a capped and locked fill pipe located adjacent to the pumphouse.
6. One 6,000-gallon pressure storage tank located adjacent to the pumphouse.
7. Iron/Manganese treatment system located inside the pumphouse.
8. One Case 280 backhoe.
9. One pickup truck with snowplow.
10. One air compressor.
11. Welding equipment.

Atmospheric Storage Tank Questions – Guide Page 3

Does this system have an atmospheric storage tank? If yes, how many?	Yes	No	<u>1</u> # tanks	6
Are your atmospheric storage tank(s) equipped with a fill pipe for supplied water?	Yes	No	n/a	7

System Design Table – Guide Page 4

What is the total production capacity of this system?	43,200	gallons per day	9
What is the total storage capacity of this system?	26,000	gallons	10
What is the average daily demand of this system?	14,400	gallons per day	11
What is the maximum daily demand of this system?	21,600	gallons per day	12
Divide total storage capacity by average daily demand.	1.8	days	13

**Boil Order** (Section 5 of the Guide)

Below is an example of typical language a small system could use to describe its process of implementing a boil order.

*If necessary, Carole Clark, Co-Owner, will implement a boil order notification at Scenic View Campground. Scenic View Campground will refer to the DES and/or the Town Health Officer to make decisions requiring or canceling a boil order. The Campground will use the same notice posting system described earlier to implement a boil order and also to cancel a boil order.*

**Alternate Water Source** (Section 6 of the Guide)

An important part of a plan is to establish how a system will provide alternate water if necessary during an emergency. As discussed on page 4 of the Guide, small systems are required to submit brief discussions of bottled/bulk water, new sources, and tie-in to adjacent systems as viable sources of alternate water. Below are examples of typical language a system could use to describe its process of supplying alternate water. You also need to answer a few questions on page 4 of the Guide as shown below.

Bottled and Bulk Water

*Nice MHP will utilize bulk truck water delivery to provide drinking water during a prolonged emergency. We discussed our water needs with XYZ Company who indicated that they would deliver bulk water to us in approximately 4 hours under normal driving conditions. Deliveries will be in 6,000-gallon increments with a maximum of 2 trucks delivering in tandem. Our second choice to provide bulk truck water is ABC Company. The phone numbers of XYZ and ABC Companies are in the service/repair notification list. If necessary, Nice MHP will provide bottled water to our unique system customer on a priority basis.*

Bottled/Bulk Water Questions – Guide page 4

Have you discussed your potential water needs with at least 2 suppliers?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	14
Approximately how long will it take for bottled or bulk water to reach this system?	4	hours	15

New Source

*This is not an alternate water source option for Nice MHP because we do not have any inactive sources to potentially reactivate and because our two current wells are more than adequate to meet our water supply needs.*

Abutting System

*The Campground is currently exploring becoming of the South Main Street Water District. The District is in the process of researching a possible system expansion.*

Adjacent System Tie-in Questions – Guide page 4

Are any water systems situated adjacent to this system?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	16
Have you discussed the feasibility of connecting to another system with representatives of that system(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	17
Is it feasible for this system to connect to an adjacent system? If yes, attach a general description of how you would make the connection.	<input checked="" type="radio"/> Yes	<input type="radio"/> No	18

## **Water Conservation** (Section 7 of the Guide)

Emergency response actions often include water conservation as a means of coping with the loss of source capacity. An obvious example is a drought, where conservation may be the only response action taken. Therefore, a good emergency plan for a water system will set forth water conservation measures, estimate how much water could be saved, describe how it will be implemented, and who will oversee it. The degree of water conservation necessitated by an emergency can be dependent upon factors such as the nature, severity, and duration of an emergency, seasonal demands on your system, storage capacity, and excess capacity.

*Scenic View Campground will implement the following water conservation measures as necessary in the event of a water system emergency:*

1. *Watering gardens, lawns and other landscaped areas will be restricted at a minimum or banned entirely.*
2. *Washing cars, trucks, boats, RVs, etc., will be restricted at a minimum or banned entirely.*
3. *Using water from a hose to rinse or clean sidewalks, driveways, decks, etc. will be restricted at a minimum or banned entirely.*
4. *Filling the swimming pool will be restricted at a minimum or banned entirely.*
5. *Guests will be required to follow indoor water use restrictions adopted from DES Fact Sheet #WD-WSEB-26-2 that lists water efficiency practices for indoor domestic water use.*
6. *In a prolonged or dire emergency requiring reliance on bulk water, rationing will be implemented.*

*If an emergency necessitates shutting down one of our wells, we will use bulk truck delivery of water.*

*Carole Clark will implement water conservation notification at the Campground. The same notice posting system described earlier will be used to implement and cancel water conservation measures.*

## **Return to Normal Operation** (Section 9 of the Guide)

*The decision when to return to normal system operation will be made by the Paul Clark Co-Owner and Operator. He will make this decision with input from the DES if contamination is the cause of the emergency event. He will have the responsibility of overseeing the return to normal operation of the system components. The Operator will do any additional water sampling that may be necessary to assess system conditions before returning to normal operation. All water system users will be notified using the same notice posting system described earlier when the system has been returned to normal operation.*

## **Plan Readiness** (Section 10 of the Guide)

Plan readiness is the arrangements made by the system to ensure that its plan is always functional and available for use on very short notice (perhaps measured in minutes). At a minimum, all key people must know where to quickly find the plan and be familiar with their roles. Each key person should have a copy of each updated plan. Other pertinent places to store up-to-date plans include system offices, pumphouses, and meeting rooms. An important issue for systems with homeowners associations (like our fictional Nice MHP) is that each successive group of association officers be briefed on all aspects of your plan. Emergency plans are required for all community water systems, so it is simply good common sense that the people responsible for using and maintaining the plan be aware of it, understand it, and know the requirements they need to meet. Your emergency plan must include a brief description of your plan readiness arrangements.

Scenic View Campground has taken the following steps to ensure plan readiness:

1. Each person listed on our chain-of-command will keep a copy of this and each annually updated plan in their residence.
2. A copy of our most recent plan will be kept in the Campground Office.
3. A copy of our most recent plan will be posted in our recreation building.
4. A copy of our most recent plan will be kept in our pumphouse.
5. The cover of our plan is brightly colored to make it easy to find.
6. An article about our plan will be placed in our newsletter so all our customers know it exists.
7. In all cases, earlier plans will be discarded after receipt of a newer plan.

Plan Readiness Questions - Guide Page 6

Do the key representatives of this system know about this emergency plan?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	23
Has this system clearly defined for each key person what his or her responsibilities will be during an emergency, i.e., does each key person clearly understand their role?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	24
Has this system rehearsed this emergency plan within the last two years?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	25
For property owner associations: will each successive group of officers be informed of the existence of, and briefed on, all aspects of this emergency plan?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A

**Signatures**

<u>Paul Clark</u>	<u>11-15-04</u>
Paul Clark, Co-Owner/Operator	Date
<u>Carole A. Clark</u>	<u>11-15-04</u>
Carole Clark, Co-Owner	Date

**Appendix 8**  
**Water System Photos**

## South Main Water District



View of Municipal sand pile from South Main Street Water District Pump House.



Sand pile is located within the sanitary protective area, within 180 feet of the District wells.



Horse pasture and residence located North of District wells in source protection area.



View of recreation path which runs between South Main Street Water District pump house and wells.

**Scenic View Campground**



View of campground Entrance.



Location of well #2 next to RV and behind tree.



Well is located within six feet of RV.