

# Source Water Assessment Program (SWAP) Report

## For

### NASHOBA REGIONAL HIGH SCHOOL



Prepared by the  
Massachusetts Department of  
Environmental Protection,  
Bureau of Resource Protection,  
Drinking Water Program

Date Prepared:  
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**Table 1: Public Water System (PWS) Information**

<i>PWS NAME</i>	NASHOBA REGIONAL HIGH SCHOOL
<i>PWS Address</i>	12 GREEN STREET
<i>City/Town</i>	BOLTON
<i>PWS ID Number</i>	2034010
<i>Local Contact</i>	JAMES DUCHARME
<i>Phone Number</i>	(978) 779-2257

		<i>Zone I (in feet)</i>	<i>IWPA (in feet)</i>	<i>Source Susceptibility</i>
<i>Well Name</i>	<i>Source ID#</i>			
Well #1	2034010-01G	286	789	High

#### What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? inventory land uses within the recharge areas of all public water supply sources;
- ? assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? publicize the results to provide support for improved protection.

#### Maintaining Your Good Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

## INTRODUCTION

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

#### Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential contaminant sources, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

#### This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

## 1. DESCRIPTION OF THE WATER SYSTEM

#### The Well

The well for the Nashoba Regional High School is located in a pit, in the boiler room which is located in the basement of the school building. The well has a Zone I of 286 feet and an Interim Wellhead Protection Area (IWPA) of 789 feet. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA. The well serving the facility has no treatment at the time of this report. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1.

### What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.

- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

### What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

## 2. DISCUSSION OF LAND USES IN THE PROTECTION AREAS

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

**Key issues include:**

1. **Inappropriate activities in Zone I;**
2. **An underground storage tank (UST) with heating oil;**
3. **Hazardous material storage;**
4. **Septic system;**
5. **Transmission Line Right of Way;**
6. **Transportation corridor; and**
7. **Stormwater drain.**

The overall ranking of susceptibility to contamination for the well is High, based on the presence of at least one high threat land use or activity in the IWPA.

1. **Zone I-** Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone I. The facility's Zone I contains school buildings, athletic fields, roads, parking areas, and a UST. No fertilizers or pesticides are applied. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.
2. **Underground Storage Tank** – A UST with heating oil is within the IWPA. The tank is double walled steel and is placed in a cast-in-place underground vault. The tank has leak detection.
3. **Hazardous Materials Storage** – All the chemicals used in the science laboratory are stored in a locked cabinet in the school building. That portion of the school building is located within the IWPA of the water supply well.
4. **Septic system** – The septic system for the school is located within the IWPA. The waste from the graphic arts and the photographic laboratories go into the septic system.
5. **Transportation corridor** – Main Street (Route 117) is located within the IWPA of the well. Transportation corridors can be a potential source of contamination from road salt or accidental leaks or spills.

**Table 2: Table of Activities within the Water Supply Protection Areas**

Facility Type	Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
School	Fuel Storage Below Ground	No	Yes	High	Heating oil tank with secondary containment and leak detection
	Chemical storage	No	Yes	High	In the science laboratory
	Parking lot, driveways & roads	Yes	Yes	Moderate	Limit road salt usage and provide drainage away from wells
	Athletic Field	Yes	Yes	Moderate	Fertilizer and pesticide use
	Stormwater drain	Yes	Yes	Low	Drain out side of the Zone I
	Septic System	No	Yes	High	See septic systems brochure in the appendix
	Transmission line right of way	No	Yes	Low	Spraying of herbicides for clearing

\* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - [www.state.ma.us/dep/brp/dws/](http://www.state.ma.us/dep/brp/dws/).

## Glossary

**Zone I:** The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

**IWPA:** A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I I. To determine IWPA radius, refer to the attached map.

**Zone II:** The primary recharge area defined by a hydrogeologic study.

**Aquifer:** An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

**Hydrogeologic Barrier:** An underground layer of impermeable material that resists penetration by water.

**Recharge Area:** The surface area that contributes water to a well.

## Recommendation

- ✓ Contact your local fire department to ensure that the IWPA is included in emergency response planning.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

## 3. PROTECTION RECOMMENDATIONS

Nashoba Regional High School should review and adopt the following recommendations at the facility:

### Zone I:

- ✓ Remove all non-water supply activities from Zone I, to comply with DEP's Zone I requirements. Please note that water systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying system.
- ✓ Do not use or store pesticides, fertilizers or road salt within Zone I.
- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Consider well relocation if Zone I threats cannot be mitigated. Please note that DEP Permit Approvals must be obtained prior to the installation of a new well.

### Training and Education:

- ✓ Train staff on proper hazardous material transportation, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, certified operator, and food preparation staff.
- ✓ Incorporate groundwater education into school curriculum.

### Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, see the hazardous materials guidance manual at <http://www.dep.state.ma.us/dep/bwp/dhm/dhmpubs.htm>
- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.

- ✓ The septic system components should be located, inspected, and maintained on a regular basis. Refer to the attachment for more information regarding septic systems.

### Planning:

- ✓ Work with local officials in Bolton to include the facility IWPA in Aquifer Protection District Bylaws and other regulations and to assist you in improving protection.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.
- ✓ Have a plan to address short-term water shortage and long-term water demands. Keep the phone number of a bottled water company readily available.

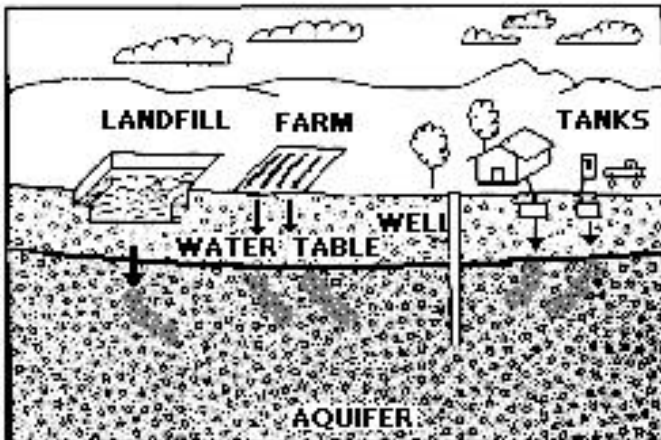


Figure 1: Example of how a well could become contaminated by different land uses and activities.

**For More Information:**

Contact Josephine Yemoh-Ndi in DEP's Worcester Office at (508) 792-7650 x 5030 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on DEP's web site at:  
[www.state.ma.us/dep/brp/dws](http://www.state.ma.us/dep/brp/dws).

Copies of this assessment have been provided to the water department, town boards, the town library and the local media.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

**Funding:**

The Department's Wellhead Grant Protection Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the 2001 "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet from last year (Please note: each program year the Department posts a new Request for Response for the Grant program (RFR)).

**4. ATTACHMENTS:**

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Pesticide Use Factsheet