

Source Water Assessment Program (SWAP) Report

For Hubbardston Center School



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

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Table 1: Public Water System (PWS) Information

<i>PWS NAME</i>	Hubbardston Center School
<i>PWS Address</i>	Elm Street
<i>City/Town</i>	Hubbardston
<i>PWS ID Number</i>	2140004
<i>Local Contact</i>	Bill Burnett
<i>Phone Number</i>	(978) 355-4668

<i>Well Name</i>	<i>Source ID#</i>	<i>Zone I (in feet)</i>	<i>IWPA (in feet)</i>	<i>Source Susceptibility</i>
Well #1	2140004	129	434	Moderate

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.

SWAP and 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 for Hubbardston Center School is located across Route 68 (Main Street), in the town common property. The well is a bedrock well and has a Zone I of 129 feet and an Interim Wellhead Protection Area (IWPA) of 434 feet. The Hubbardston Center School system also supplies water to the adjacent Town Library, and Town Offices/Police Station. 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 chlorine added as a disinfectant, and the water is softened to remove Iron and Manganese. 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. **Aboveground storage tanks (AST) with heating oil;**
3. **Septic system within the IWPA; and**
4. **Stormwater drains.**

The overall ranking of susceptibility to contamination for the well is Moderate, based on the presence of moderate and low threat land use or activity in the IWPA, as seen in Table 2.

1. Zone I – Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone Is. The facility's Zone I contains Route 68 (Main Street), access road to the town hall, building (private home), and parking areas. 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.

Recommendations:

- ✓ Remove all non-water supply activities from the Zone Is to comply with DEP's Zone I requirements.
- ✓ Do not use or store road salt within the Zone I.
- ✓ If the facility plans to continue to use the parking areas, roads, and buildings within the Zone I, use BMPs and restrict activities that could pose a threat to the water supply.
- ✓ Keep new non-water supply activities out of the Zone I.

2. Aboveground Storage Tanks – There are three ASTs with heating oil within the IWPA. One of the ASTs is located at the Town Hall, one at the school, and the third is at a private residence. If managed improperly, Aboveground Storage Tanks can be a potential source of contamination due to leaks or spills of the chemicals they store.

Recommendations:

- ✓ Aboveground storage tanks in your IWPA should be located on an impermeable surface, and also contained in an area large enough to hold 110% of the complete liquid volume, should a spill occur.

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

Facility Type	Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
School	Parking lot, driveways & roads	Yes	Yes	Moderate	Limit road salt usage and provide drainage away from wells
	Fuel Storage Above Ground	No	Yes	Moderate	Three tanks total
	Septic Systems	No	Yes	Moderate	See septic systems brochure
	Stormwater drains	No	Yes	Low	Five Drains
	Structures	Yes	Yes	---	Non-water supply structures in Zone I

* -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/.

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. 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.

Upgrade all oil/hazardous material storage tanks to incorporate proper containment and safety practices. Any modifications to the AST must be accomplished in a manner consistent with Massachusetts's plumbing, building, and fire code requirements. Consult with the local fire department for any additional local code requirements regarding ASTs.

3. **Septic system** - Private homes, the Library, Police Station and the Town hall all have their septic systems in the IWPA. The school's septic system is located off-site, outside the protective radii, however.

Recommendations:

- ✓ The private residents and staff from the library, town hall, and Police department should be trained on proper disposal of hazardous materials.
- ✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the appendices for more information regarding septic systems.

4. **Stormwater drains**— Five storm drains are located on the school property, within the IWPA. If not cleaned, stormwater drains carry storm water from the roadway and adjacent properties to the ground. As flowing storm water travels, it picks up debris and contaminants from streets, parking areas and lawns. Common potential contaminants include lawn chemicals, pet waste, leakage from dumpsters, household hazardous waste, and contaminants from vehicle leaks. **Recommendation:**

- ✓ Work with your community to ensure that stormwater runoff is directed away from the well and is treated according to DEP guidance.

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

3. Protection Recommendations

Hubbardston Center School should review and adopt the following recommendations at the facility:

Zone I:

- ✓ Consider well relocation if Zone I threats cannot be mitigated.

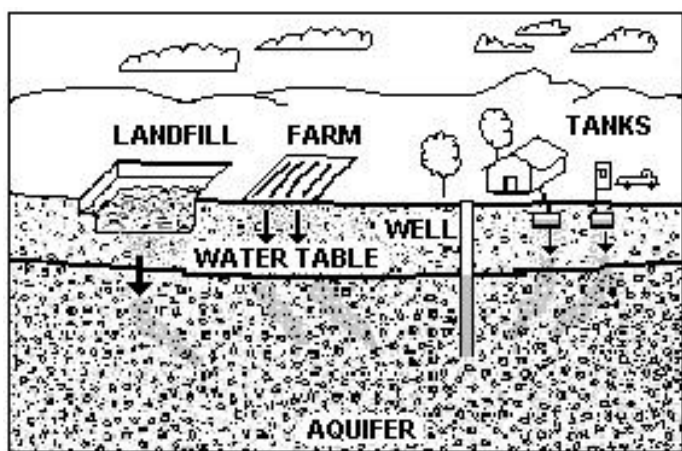


Figure 1: Example of how a well could become contaminated by different land uses and activities.

Training and Education:

- ✓ Train staff and residents on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, and certified operator.
- ✓ Post drinking water protection area signs at key visibility locations.
- ✓ Incorporate groundwater education into school curriculum (K-6 and 7-12 curricula available; contact DEP for copies).

Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials.
- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.

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.

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

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

Planning:

- ✓ Work with local officials in Hubbardston to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ 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.

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.

4. Attachments

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

