



# Source Water Assessment Program (SWAP) Report For Pilot Grove Apartments

## 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.

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

Date Prepared:  
July 10, 2001

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

<b>PWS NAME</b>	Pilot Grove Apartments
<b>PWS Address</b>	11 Warren Road
<b>City/Town</b>	Stow
<b>PWS ID Number</b>	2286018
<b>Local Contact</b>	Ray Frost
<b>Phone Number</b>	(978) 897-0313

<b>Well Name</b>	<b>Source ID#</b>	<b>Zone I (in feet)</b>	<b>IWPA (in feet)</b>	<b>Source Susceptibility</b>
Well #1	2286018-01G	217	535	Moderate
Well #2	2286018-02G	228	545	Moderate

## 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 apartment complex gets its water supply from two wells. Well #1 is 12-inch diameter bedrock well, drilled to a depth of 650 feet. Well #2 is an 8-inch diameter bedrock well drilled to a depth of 650 feet. Well #1 has a Zone I of 217 feet and an Interim Wellhead Protection Area (IWPA) of 535 feet, and well #2 has a Zone I of 228 feet and an IWPA of 545 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 this time. For current information on monitoring results and treatment, and a copy of the most recent Consumer Confidence

### 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).

Report please contact the Public Water System contact person listed above in Table 1.

## 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 Is;**
2. **Lawn care and fertilizer use; and**
3. **Utility substation transformer.**

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

1. **Zone Is** – Currently, the wells do not meet DEP's restrictions, which only allow water supply related activities in Zone I. The facility's Zone Is contain apartment buildings, an access road 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 I to comply with DEP's Zone I requirements.
- ✓ Do not use road salt in the Zone I.
- ✓ Keep non-water supply activities out of the Zone I.
- ✓ If the facility intends to continue utilizing the structures, road, and parking areas in the Zone I, use BMPs and restrict activities that could pose a threat to the water supply.

2. **Lawn care and fertilizer use**- Fertilizer is applied to flower beds that are located within the IWPA. Over-application of fertilizers is a potential source of contamination to the water supply.

#### Recommendations:

- ✓ Do not use fertilizers within the Zone I.
- ✓ Use best management practices when applying fertilizer in the IWPA.

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

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Parking lot, driveways & roads	All	All	Moderate	Limit road salt usage and provide drainage away from wells
Landscaping and lawn care	No	All	Moderate	Fertilizer and pesticide use
Utility substation transformer	No	All	Low	Located on impervious surface (concrete pad)

\* -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.

**3. Utility substation transformer** – A utility transformer mounted on a concrete pad is located behind the building. Older utility transformers may contain PCBs that could leak out and become potential sources of contamination if not properly contained.

### Recommendations:

- ✓ For utility transformers that may contain PCBs, contact the utility company to determine if PCBs have been replaced. If PCBs are present, urge their immediate replacement.
- ✓ Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.

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

## 3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the wells' susceptibility to contamination. Pilot Grove Apartments should review and adopt the key recommendations above and the following:

### Zone I:

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

### Facilities Management:

- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.

### Planning:

- ✓ Work with local officials in Stow 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.

### Funding:

The Department's Wellhead Protection Grant 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 "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet (Please note: each program year the Department posts a new Request for Response for the Grant program (RFR)).

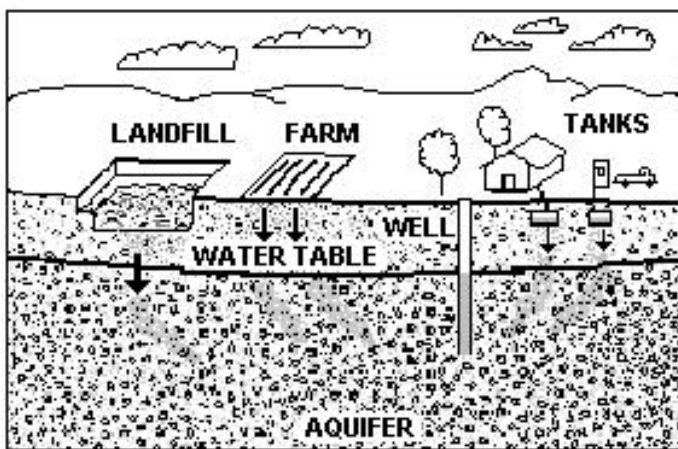


Figure 1: Example of how a well could become contaminated by different land uses and activities.

### **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 the Drinking Water Program 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 public water supplier, 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.

## **4. Attachments**

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Pesticide Use Factsheet
- Wellhead Protection Grant Program Fact Sheet

### **Additional Documents:**

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

