



# Massachusetts Department of Environmental Protection Source Water Assessment and Protection (SWAP) Report For Meadow Woods Mobile Home Park

## What is SWAP?

The Source Water Assessment and Protection (SWAP) program, 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

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

<i>PWS NAME</i>	Meadow Woods Mobile Home Park
<i>PWS Address</i>	2 Catherine Lane
<i>City/Town</i>	Carver, Massachusetts
<i>PWS ID Number</i>	4052054
<i>Local Contact</i>	Paul Parsons
<i>Phone Number</i>	(508) 866-2613

<i>Well Name</i>	<i>Source ID#</i>	<i>Zone I (in feet)</i>	<i>IWPA (in feet)</i>	<i>Source Susceptibility</i>
Well No. 1	4052054-01G	220	711	High
Well No. 2	4052054-02G	220	711	High

## Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, 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 sources of contamination 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 wells for Meadow Woods Mobile Home Park are located in the southwestern portion of the park. Both Well No. 1 and Well No. 2 are wellfields and each wellfield has a Zone I extending 220 feet from the perimeter well points. Both wells have Interim Wellhead Protection Area radii (IWPA) of 711 feet measured from the center of each wellfield. The IWPA's provide interim protection areas for water supply wells when the actual recharge area has not been delineated. The actual recharge area to the wells may be significantly larger or smaller than the IWPA's. The wells are 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 Is and IWPA's.

### 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).

Both wells are treated with chlorine as a disinfectant. The DEP requires public water suppliers to monitor the quality of the water. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Drinking water monitoring reporting data is also available on the web via EPA's Envirofacts website at [http://www.epa.gov/enviro/html/sdwis/sdwis\\_query.html](http://www.epa.gov/enviro/html/sdwis/sdwis_query.html).

## 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. **Residential Land Uses; and,**
3. **Cranberry Bogs**

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, as seen in Table 2. The threat ranking could be lowered to moderate with the removal of all fuel oil/kerosene tanks from the Zone I or the placement of each tank on an impervious surface within a contained area large enough to hold the contents of the tank should a release occur.

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 driveways and residences. 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:

- ✓ Work with residents within Zone I to encourage the replacement of fuel oil or kerosene heat with propane heat and to properly remove the fuel oil/kerosene tanks from the residence if they do convert to an alternate heating source.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ Direct driveway drainage in the Zone I away from the wells.
- ✓ If possible relocate septic systems outside of the Zone I.

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

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Driveways/road and parking areas	Yes	Yes	Moderate	Limit road salt usage and provide drainage away from wells
Fuel Storage Above Ground	Yes	Yes	High	Proper maintenance and upgrades to fuel oil tanks to prevent releases from occurring
Septic System	Yes	Yes	Moderate	See septic systems brochure in the appendix, relocate septic systems outside of Zone I
Lawn care/gardening	Yes	Yes	Moderate	Encourage residents in proper storage, disposal, and application of pesticides.
Cranberry Bogs	No	Yes	Moderate	Fertilizer and pesticide use

\* -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. 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.

**2. Residential Land Uses** –All of the residences have on-site septic systems. If managed improperly, activities associated with residential areas can contribute to drinking water contamination. Common potential sources of contamination include:

- ✓ **Septic Systems** - Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the groundwater because septic systems lead to the ground. If septic systems fail or are not properly maintained, they can be a potential source of microbial contamination.
- ✓ **Household Hazardous Materials** - Hazardous materials may include automotive wastes, paints, solvents, pesticides, fertilizers, and other substances. Improper use, storage, and disposal of chemical products used in homes are potential sources of contamination.
- ✓ **Heating Oil Storage** - If managed improperly, Underground and Aboveground Storage Tanks (USTs and ASTs) can be potential sources of contamination due to leaks or spills of the fuel oil they store.
- ✓ **Stormwater** – Catch basins transport stormwater from roadways and adjacent properties to the ground. As flowing stormwater travels, it picks up debris and contaminants from streets and lawns. Common potential contaminants include lawn chemicals, pet waste, and contaminants from automotive leaks, maintenance, washing, or accidents.

### Residential Land Use Recommendations:

- ✓ Educate residents on best management practices (BMPs) for protecting water supplies. Distribute the fact sheet “Residents Protect Drinking Water” available in Appendix A and on [www.mass.gov/dep/brp/dws/protect.htm](http://www.mass.gov/dep/brp/dws/protect.htm), which provides BMPs for common residential issues.
- ✓ Promote BMPs for stormwater management and pollution controls.

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 well’s susceptibility to contamination. Meadow Woods Mobile Home Park is

commended for posting the Zone I, having a formal Emergency Response Plan, and for providing wellhead protection education to the residents. Meadow Woods Mobile Home Park should review and adopt the key recommendations above and the following:

### Priority Recommendations:

- ✓ Encourage the replacement of fuel oil or kerosene heat with propane heat so that oil/kerosene tanks can be removed from the Zone I.
- ✓ If possible relocate septic systems outside of the Zone I.

### Zone I:

- ✓ Aboveground storage tanks that can not be removed from your Zone I should be located on an impermeable surface, and also contained in an area large enough to hold the complete liquid volume, should a spill occur.
- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Restrict use of salt within Zone I and drain stormwater away from well.

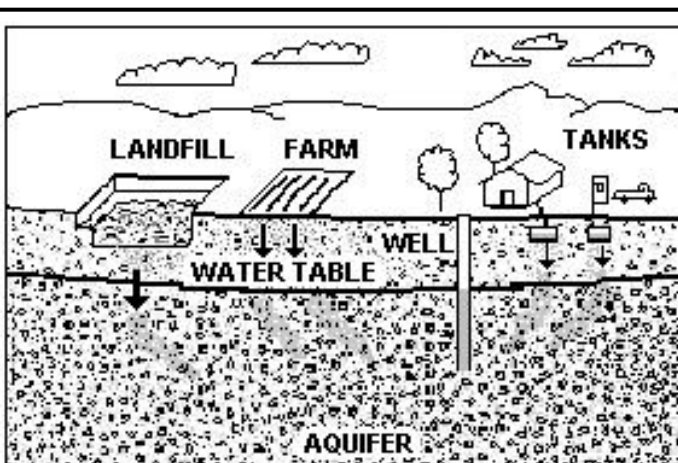


Figure 1: Example of how a well could become contaminated by different land uses and activities.

### For More Information:

Contact Isabel Collins in DEP's Lakeville Office at (508) 946-2726 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/)

### 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

Copies of this assessment have been made available to the public water supplier and town boards.

- ✓ Consider well relocation if Zone I threats cannot be mitigated.
- ✓ Conduct regular inspections of the Zone I, check any aboveground tanks for leaks.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.

### Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, and certified operator. Post labels as appropriate on raw materials and hazardous waste.
- ✓ Work with your community to ensure that stormwater runoff is directed away from the well and is treated according to DEP guidance.

### Facilities Management:

- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on park property.
- ✓ Septic system components should be located, inspected, and maintained on a regular basis.
- ✓ For utility transformers that may contain PCBs, contact the utility 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.

### Planning:

- ✓ Work with local officials in town 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.

### 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). Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" at <http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf>.

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.

## 2. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Pesticide Use Factsheet
- Wellhead Protection Grant Program Fact Sheet
- Source Protection Sign Order Form