



Massachusetts Department of Environmental Protection Source Water Assessment and Protection (SWAP) Report For Cady Brook Apartments

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

PWS NAME	Cady Brook Apartments
PWS Address	Route 169
City/Town	Charlton, Massachusetts 01507
PWS ID Number	2054040
Local Contact	Terry Combs
Phone Number	(508) 248-6639

Well Name	Source ID#	Zone I (in feet)	IWPA (in feet)	Source Susceptibility
Well #1	2054040-01G	100	419	Moderate
Well #2	2054040-02G	100	419	Moderate
Well #3	2054040-03G	100	419	Moderate
Well #4	2054040-04G	100	419	Moderate
Well #5	2054040-05G	100	419	Moderate
Well #6	2054040-06G	100	419	Moderate
Well #7	2054040-07G	100	419	High
Well #8	2054040-08G	100	419	High
Well #9	2054040-09G	100	419	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
5. Appendix

1. Description of the Water System

The nine wells for the facility are located on the premises. Each well has a Zone I of 100 feet and an Interim Wellhead Protection Area (IWPA) of 419 feet. The IWPA provides

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).

an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA. 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 to view the boundaries of the Zone Is and IWPAs.

The water is filtered to remove iron (sand multigrade replaced once a year). The DEP requires public water suppliers to monitor the quality of the water. For current information on monitoring results and treatment, and a copy of the most recent Consumer Confidence Report., please contact the Public Water System contact person listed above in Table 1. 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.

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. **Industrial land use;**
3. **Septic System;**
4. **Transportation Corridor; and**
5. **Aquatic Wildlife.**

The overall ranking of susceptibility to contamination for Wells 01G, 02G, 03G, 04G, 05G and 06G is moderate based on the presence of only moderate threat land use activity in the IWPA, as seen in Table 2. The ranking of susceptibility to contamination for Wells 07G, 08G, and 09G is high based on the presence of at least one high threat land use 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 Is. The facility's Zone Is contain buildings, roads, and parking areas. The public water supplier does not own and/or control all land encompassed by the Zone Is. 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.

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

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Parking lot, driveways & roads	All Wells	All Wells	Moderate	Limit road salt usage and provide drainage away from wells
Transportation Corridor	#1, 2, 3, 4, & 5	#1, 2, 3, 4, & 5	Moderate	Route 169
Septic System	No	Well #3	Moderate	See septic systems brochure in the appendix
Aquatic Wildlife	No	#6, 7, & 8	Low	
Industrial Land Use	No	#7 & 9	High	Hazardous Chemicals & Waste
Structures	All Wells	All Wells	-	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.

Recommendations:

- ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
- ✓ Do not use pesticides or road salt within the Zone I.

2. **Industrial park** – The water supply is located near an industrial complex. If not handled properly, spill or leaks of hazardous chemicals and or wastes can potentially contaminate groundwater.

Recommendation:

- ✓ Educate businesses on BMPs for handling, storage, and disposal of hazardous chemicals and wastes.

3. **Septic system** – The septic system is located within the IWPA's and is pumped twice a year. If improperly used or maintained, septic systems are a potential source of contamination in groundwater and the water supply.

Recommendations:

- ✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the appendices for more information regarding septic systems.
- ✓ Residents and maintenance staff should be trained on proper disposal of spent household chemicals and encouraged to participate in local Household Hazardous waste collections.

4. **Transportation corridor** - Route 169 is located within the Zone Is and IWPA's of some of the wells. Route 169 is a heavily traveled road, which increases the chances of contamination from accidents, spills or road salt.

Recommendations:

- ✓ Map stormdrain discharges within the Zone Is and IWPA's
- ✓ Work with your local fire department to ensure that they include your IWPA in the Emergency Response Planning.
- ✓ When feasible, direct stormwater out of Zone Is and away from wells.
- ✓ Inform the Town Highway Department of the IWPA for reduced salt spreading.

5. **Aquatic wildlife** – Ducks and other wildlife waste in and around the river are potential sources of contamination for the water supply.

Recommendation(s):

- ✓ Discourage wildlife by prohibiting the feeding of ducks and wildlife.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. Cady Brook Apartments should review and adopt the key recommendations above and the following:

Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Consider well relocation if Zone I threats cannot be mitigated.
- ✓ Use BMPs and restrict activities that could pose a threat to the water supply, since the Apartments will continue to be utilized.

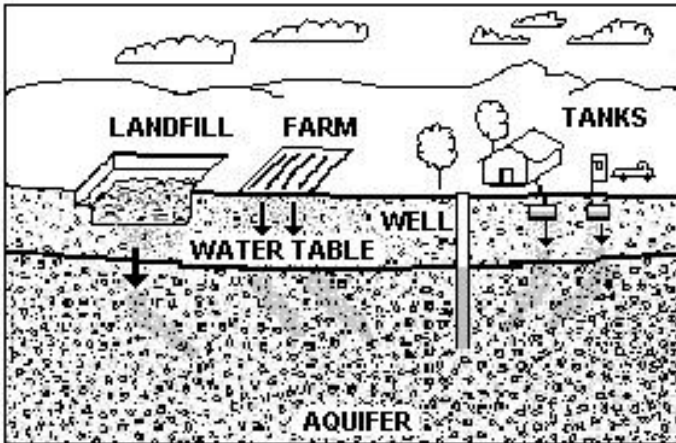


Figure 1: Example of how a well could become contaminated by different land uses and activities.

For More Information:

Contact **Josephine Yemoh-Ndi** in DEP's **Worcester Office** at (508) 792-7650 x 4030 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/

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 made available to the public water supplier and town boards.

- ✓ If it's not feasible to purchase privately owned land within the Zone I at this time, consider a conservation restriction that would prohibit potentially threatening activities or a right of first refusal to purchase the property.

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 pesticides on facility property.

Planning:

- ✓ Work with local officials in Charlton to include the facility's 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 land use 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
- Pesticide Use Factsheet
- Wellhead Protection Grant Program Fact Sheet