Source Water Assessment Program (SWAP) Report For Cady Brook Crossing Condominiums

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:
February 20, 2003

Table 1: Public Water System (PWS) Information

PWS NAME	Cady Brook Crossing Condominiums
PWS Address	28 Southbridge Rd.
City/Town	Charlton, Massachusetts
PWS ID Number	2054050
Local Contact	James Majewski
Phone Number	(508) 435-1248

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #1	2054050-01G	207	575	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

Cady Brook Crossing Condominiums obtain its water supply from a 510 foot deep rock well. The well is located approximately 120 feet from the pump house to the northeast. The well has a Zone I of 207 feet and an Interim Wellhead Protection Area (IWPA) of 517 feet. The IWPA provides 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 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 Report, 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).

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. **Cemetery;**
3. **Medical Facility;**
4. **Hazardous Material Use $ Storage;**
5. **Lawncare / gardening;**
6. **Septic systems;**
7. **Aquatic wildlife;**
8. **Transportation corridor;**
9. **Wastewater Treatment Plant.**

The overall ranking of susceptibility to contamination for the well is from below, based on the presence of at least one from below threat land use or activity in the IWPA, as seen in Table 2.

1. **Zone Is –** 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 residential buildings, roads, parking areas, and an Underground Storage Tank with propane. The public water supplier does not own and/or control all land encompassed by the Zone 1. 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 fertilizers or road salt within the Zone I.

2. **Medical Facility -** A Medical building is located in the IWA of the water supply. If managed improperly, biological, chemical, and radioactive wastes: spills, leaks, or

Table 2: Table of Activities within the Water Supply Protection Areas-Continued on Pg. 4

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Medical Facility	Yes	Yes	Moderate	Biological, chemical, and radioactive wastes: spills, leaks, or improper handling or storage
Parking lot, driveways & roads	Yes	Yes	Moderate	Limit road salt usage and provide drainage away from wells
Hazardous Material Storage & Use	No	Yes	High	Hazardous materials: spills, leaks, or improper handling or storage
Lawncare/Gardening	No	Yes	Moderate	Fertilizer use
Structures	No	Yes	Moderate	See septic systems brochure in the appendix

*** -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 II. 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.

improper handling or storage could potentially contaminate groundwater.

3. **Hazardous Material Storage & Use –**A business that use hazardous material and therefore store the hazardous material on the premises, is located within the IWPA of the well.
   Recommendation:
   ✓ The owner and or operator of the business should be made aware of the location of the source of drinking water.

4. **Lawncare/Gardening -** Fertilizer is applied to the lawn that is located within the Zone I and IWPA. Fertilizers and pesticides, if improperly applied or stored, can be potential sources of contamination to the water supply.
   Recommendations:
   V Do not use fertilizers or pesticides in the Zone I.
   V Use best management practices when applying fertilizer in the IWPA.

5. **Septic system –** The septic system is pumped biannually. If improperly used and maintained, septic systems are a potential source of microbial and non-microbial contamination in groundwater and the water supply.
   Recommendations:
   V Maintenance staff should be instructed on proper disposal of spent household chemicals.
   V Septic system components should be located, inspected, and maintained on a regular basis. Refer to the appendices for more information regarding septic systems.

6. **Transportation corridor-** Route 169 and Route 20 are located within the IWPA. Route 169 is a heavily traveled road, which increases the chances of contamination from accidents, spills or road salt.
   Recommendations:
   ✓ Work with your local fire department to ensure that they include your IWPA in the Emergency Response Planning.
   ✓ Inform the Town Highway Department of the IWPA for reduced salt spreading.

7. **Wastewater Treatment Plant – The town's wastewater treatment plant located** across Route 169 lies within the IWPA of the water supply. Although there are no records of problems with the wastewater plant, wastewater overflows are a potential source of microbial and non-microbial contamination if improperly managed.

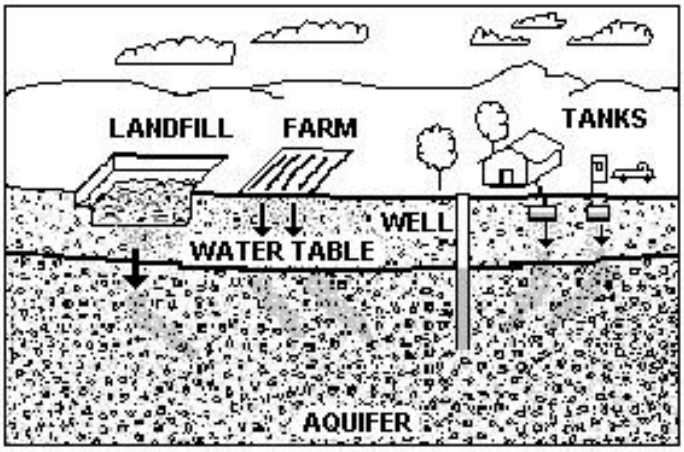

Figure 1: Example of how a well could become contaminated by different land uses and activities.

Recommendations:
✓ Let the town that the waste water treatment plant lies within the protection area of the Codman Hill water supply.
✓ Ensure that any overflows discharge outside of the protection area.
✓ Make sure that the wastewater treatment plant is operated and maintained according to DEP requirements.

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. Cady Brook Condominiums should review and adopt the key recommendations above and the following:

For More Information:

Contact Josephine Yemoh-Ndi in DEP's Worcester Office at (508) 792-7650 x4030 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 provided to the public water supplier, town boards, the town library and the local media.

Zone I:

- Keep non-water supply activities out of the Zone I.
- Consider well relocation if Zone I threats cannot be mitigated.
- Continue to conduct regular inspections of the Zone I.
- If the owners of the units that lie within the protection area intend to continue utilizing the structures in the Zone 1, use BMPs and restrict activities that could pose a threat to the water supply.
- 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.
- Do not use pesticides, fertilizers or road salt within the Zone I

Training and Education:

- Train residents 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.
- Post drinking water protection area signs at key visibility locations.

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 www.state.ma.us/dep/bwp/dhm/dhmpubs.html.

Planning:

- Work with local officials in Charlton 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 land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

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. 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.

4. Attachments

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

- Source Protection Sign Order Form

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

ninant Sources	Zone I	IWPA	Threat	Comments
corridor	Yes	Yes	Moderate	Fuels and other hazardous materials: accidental leaks or spills; pesticides: over-application or improper handling
tment Plant	No	Yes	Moderate	Treatment chemicals or equipment maintenance materials: improper handling or storage; wastewater: improper management
	Yes	Yes	-	Non-water supply structures in Zone I

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