



Massachusetts Department of Environmental Protection Source Water Assessment and Protection (SWAP) Report For Martha's Vineyard Airport

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	Martha's Vineyard Airport
PWS Address	71 Airport Road
City/Town	West Tisbury, Massachusetts 02575
PWS ID Number	4296004
Local Contact	Michael Eldridge
Phone Number	(508) 693-3783

Well Name	Source ID#	Zone I (in feet)	IWPA (in feet)	Source Susceptibility
Oak Bluffs Water District	01P	-	-	High
Well #2	02G	250	750	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

Martha's Vineyard Airport (the Airport) currently purchases all of its drinking water from Oak Bluffs Water District, a copy of their SWAP Report is attached for reference purposes. The Airport also has one inactive drinking water well, Well #2, which will be assessed within this SWAP Report. The Airport did have a Well #1 at one time but it has been abandoned and will not be assessed as part of this report. Well #2 has a Zone I of 250 feet and an Interim Wellhead Protection Area (IWPA) of 750 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.

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).

The well has no treatment at this time due to its inactive status. 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.

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. **Non-water supply activities in Zone I;**
2. **Industrial Park;**
3. **Truck Terminal;**
4. **Small engine Repair Shop;**
5. **Gravel and Mulch Dump; and**
6. **Road.**

The overall ranking of susceptibility to contamination for the well is high, based on the presence of multiple high ranked land uses within the protection area.

1. **Zone Is** – Currently, the well does not meet DEP's Zone I regulations, which allow only water supply related activities in the Zone I and require that the land within the Zone I be owned or controlled by the public water system. The Airport's Zone I contains Barnes Road. The Zone I is owned by the county and a small portion by the state. 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:

- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
 - ✓ Direct stormwater drainage out of Zone I.
2. **Industrial Park** – There is an industrial park within the IWPA. Activities associated with industrial parks that have the potential to contaminate groundwater

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

Potential Contaminant Sources	Zone I	IWPA	Threat	Potential Concern
Industrial Park	No	Yes	High	Hazardous materials, illegal floordrains and stormwater
Trucking terminal	No	Yes	High	Automotive fluids and stormwater runoff
Small engine repair shop	No	Yes	High	Hazardous materials, possible illegal UICs and stormwater runoff.
Gravel and mulch dump	No	Yes	Moderate	Stormwater runoff
Road	Yes	Yes	Moderate	Stormwater runoff, spills

* 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.

include; hazardous materials storage and use, floordrains not in compliance with DEP's 310 CMR 27.00 Underground Injection Control (UIC) Regulations, contaminated stormwater runoff and landscaping activities.

Recommendations:

- ✓ Educate business owners on proper hazardous materials best management practices (BMPs).
- ✓ Ensure no facilities have floordrains that lead to the ground which do not meet DEP's UIC regulations.
- ✓ Educate owners on BMPs for stormwater management and landscaping activities.

3. **Truck Terminal** – There is a truck terminal for a fleet of distribution vehicles. Potential threats to groundwater from trucking operations include mishandling of automotive fluids, illegal floordrains leading to the ground and contaminated stormwater runoff.

Recommendations:

- ✓ Educate owners on BMPs for vehicular maintenance, if applicable.
- ✓ Ensure any floordrains are in compliance with DEP's UIC regulations.
- ✓ Ensure stormwater runoff is managed properly.

4. **Small Engine Repair Shop** – There is a small engine repair shop within the protection area. Activities associated with small engine repair include leaks and spills of hazardous materials and hazardous wastes, illegal floordrains (UIC), and contaminated stormwater runoff.

Recommendations:

- ✓ Educate owner on BMPs for hazardous materials and hazardous waste handling.
- ✓ Ensure there are no illegal floordrains leading to the ground (including septic systems); refer to 310 CMR 27.00 Underground Injection Control regulations and 310 CMR 15.000 the Title 5 regulations.
- ✓ Ensure stormwater runoff is managed properly.

5. **Gravel and Mulch Dump** – There is a gravel and mulch dump in the IWPA, improperly managed runoff from processing areas is a threat to groundwater quality.

Recommendation:

- ✓ Ensure proper controls are in place at gravel and mulch dump.

6. **Road** – Part of a road is within the Zone I and IWPA. Runoff and spills from roads can contaminate public wells.

Recommendations:

- ✓ Direct stormwater out of Zone I.
- ✓ Continue to maintain contact with the Fire Department about spills.

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. The Martha's Vineyard Airport is commended for having control over the Zone I. Airport officials should review and adopt the key recommendations above and the following:

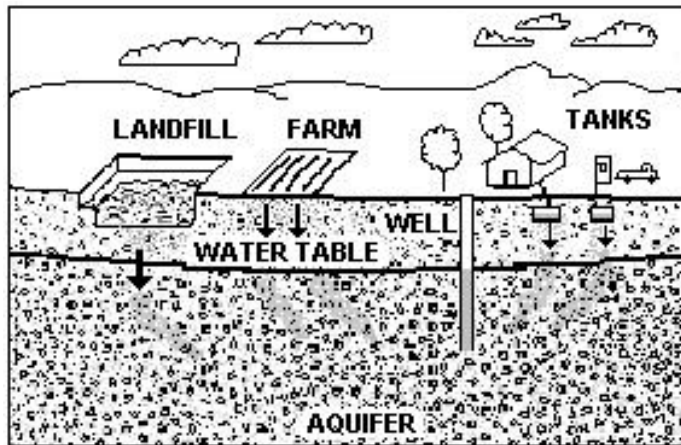


Figure 1: Example of how a well could become contaminated by different land uses and activities.

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/

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.

Priority Recommendations:

Zone I:

- ✓ Keep additional non-water supply activities out of the Zone I.
- ✓ Post water supply protections signs in the Zone I and IWPA.
- ✓ Prohibit public access to the well and pumphouse by locking facilities.
- ✓ Conduct regular inspections of the Zone I. Look for illegal dumping or evidence of vandalism.
- ✓ Use Best Management Practices (BMPs) and restrict activities that could pose a threat to the water supply.
- ✓ Keep road and parking lot drainage away from the well.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.

Training and Education:

- ✓ Educate businesses in the protection area on BMPs for drinking water protection.
- ✓ Work with your community to ensure that stormwater runoff at the road is directed away from the well and is treated according to DEP guidance.

Planning:

- ✓ Work with local officials in town to include the facility's IWPA in an Aquifer Protection District Bylaw and to assist you in improving protection.
- ✓ 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 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 that program. For additional information, please refer to DEP's web site. 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>.

Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

7. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Fact Sheet
- Your Septic System Brochure
- Industrial Floor Drains Brochure
- Businesses Protect Drinking Water
- Source Protection Sign Order Form