Massachusetts Department of Environmental Protection
Source Water Assessment and Protection (SWAP) Report
for

Berkshire Spring

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.

Susceptibility and Water Quality

Susceptibility is a measure of a water supply's potential to become contaminated due to land uses and activities within its recharge area.

A source's susceptibility to contamination does *not* imply poor water quality.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, disinfecting, filtering, or treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Actual water quality is best reflected by the results of regular water tests. To learn more about your water quality, refer to your water supplier's annual Consumer Confidence Reports.

Table 1: Public Water System Information

PWS Name	Berkshire Spring
PWS Address	Summer Street
City/Town	Lanesborough
PWS ID Number	1148015
Local Contact	John Olander
Phone Number	(413) 442-1167

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 storm runoff, 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.

Refer to Section 3 for recommendations to address potential sources of contamination. 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 the following sections:

1. Description of the Water System
2. Land Uses in the Protection Areas
3. Protection Recommendations
4. Attachments

Section 1: Description of the Water System

Zone II #: 595 ***Susceptibility:*** Moderate

Well Names	*Source ID*
Spring #1	1148015-01G

Berkshire Spring is a spring located on Summer Street in the town of Lanesborough, a rural, small town in Berkshire County. Berkshire Spring receives its water from one (groundwater) spring source. The source supplies water to the general public through a free flowing tap located along the side of the road, to several private homes north of Summer Street and to the public water system Berkshire Village Cooperative (1148001). Berkshire Village Cooperative water system supplies water to 32 residences, one business and two churches. Spring #1 is located south of Summer Street, approximately 300 feet west of the intersection with Old State Road in Lanesborough, Massachusetts.

The source is a sping vault located at the base of a hill with some evidence of thin sand and gravel deposits overlying bedrock noted in nearby outcrops. The USGS, as part of the SWAP program, delineated the Zone II area of contribution to the spring and identified the contributing source as the dolomite bedrock. The Zone I is the area immediately surrounding the source. Spring #1 has a Zone I area that is square shaped with each side measuring 800 feet in length and oriented in the direction of groundwater flow. The Zone II area extends south along a bedrock ridge. Flow from the source is estimated to be greater than 50 gallons per minute. The spring is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers (i.e. clay). Although there is evidence of some overburden, there are also numerous bedrock exposures in the Zone II area. Please refer to the attached map to view the boundaries of the Zone I and Zone II areas.

Currently the water does not receive treatment. For current information on water quality monitoring results, customers of Berkshire Spring should contact the Public Water System contact person listed above in Table 1. However, customers of Berkshire Village Cooperative, which receives its water from Berkshire Spring, should instead contact Mary Jane Dilego at (413) 499-0455 for a copy of the most recent Consumer Confidence Report. Drinking water monitoring reporting data are also available on the web at http://www.epa.gov/safewater/ccr1.html.

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 are "BMPs?"

Best Management Practices (BMPs) are measures that are used to protect and improve surface water and groundwater quality. BMPs can be structural, such as oil & grease trap catch basins, nonstructural, such as hazardous waste collection days or managerial, such as employee training on proper disposal procedures.

Section 2: Land Uses in the Protection Areas

The land uses for the Zone II for Berkshire Spring are predominantly residential, with some commercial uses, including portions of the Berkshire Mall. Land uses and activities that are potential sources of contamination are listed in Table 2, with further detail provided in the attached Table of Regulated Facilities.

Key Land Uses and Protection Issues include:

1. Non-conforming Zone I
2. Photo Processing Lab
3. Automobile Repair and Maintenance Shop
4. Residential Land Uses
5. Protection Planning

The overall ranking of susceptibility to contamination for the system is moderate, based on the presence of at least one moderate threat land use within the water supply protection areas, as shown in Table 2.

1. Non-conforming Zone I – The Zone I for Spring #1 is square shaped with each side length measuring 800 feet. Massachusetts drinking water regulations (310 CMR 22.00 Drinking Water) requires public water suppliers to own the Zone I, or control the Zone I through a conservation restriction and allows only water supply related or other non-threatening activities in the Zone I. Many public water supplies were developed prior to the Department's regulations and contain non water supply activities. The following non- water supply activities occur within the Zone I:

Zone I Activities: The Zone I contains portions of Summer Street and Old State Road, and private residences.

Zone I Recommendations:

- ✓ To the extent possible, limit access to the Zone I area.
- ✓ 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.

2. Photo Processing Lab – The photo processor at this location is registered through the Environmental Results Program as a photo processor and additionally as a small quantity generator of hazardous waste. The Environmental Results Program (ERP) streamlines existing pollution control requirements for photo processing facilities by replacing individual water pollution control and hazardous waste recycling permits with a minimum statewide silver discharge limit; monitoring; and simplified operating and maintenance rules. Most automated photo processing equipment produces silver-bearing waste.

Recommendation:

- ✓ The photo processor should review its Environmental Results Program (ERP) certification and the *Photo Processor Environmental Certification Workbook* for photo processors that covers DEP's industrial wastewater management, and hazardous waste management requirements for photo processing operations. The workbook explains the standards, and provides tips on how to comply. Some facilities may be subject to additional state, federal or local environmental standards that are not covered by the ERP compliance certification. The photo processor must still comply with these requirements, even though they are not included as part of the ERP certification.

3. Auto Repair and Maintenance Shop– An automobile repair/maintenance shop is located within the Zone II. If handled improperly, leaks and spills of automotive fluids and cleaning solvents can potentially contaminate the water supply.

Recommendations:

- ✓ Educate the neighboring auto repair shop about the location of the well and Zone II.
- ✓ Encourage the shop to use BMPs for the storage, handling, and disposal of all hazardous chemicals.
- ✓ If the auto body facility has floor drains, ensure that the floor drains lead to a tight tank or municipal sewer as required by the plumbing code and

Glossary

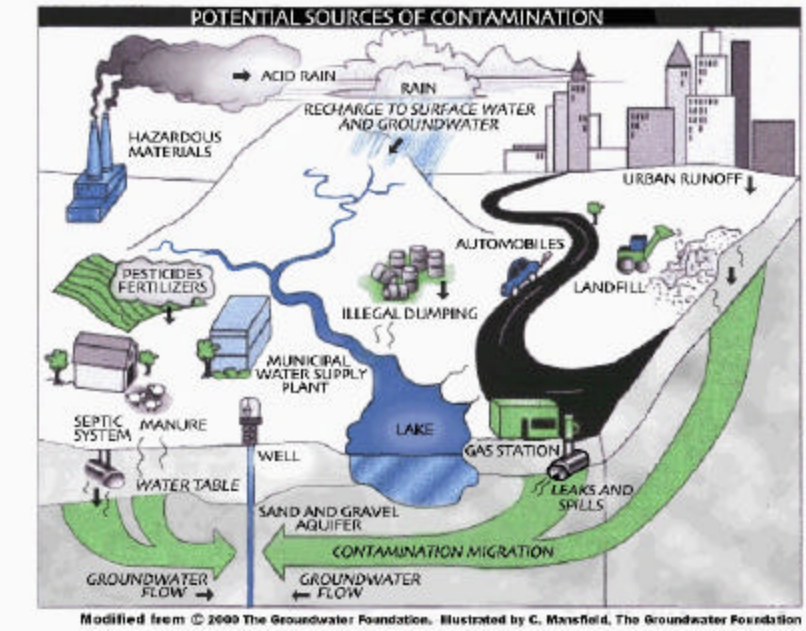
Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material (i.e. clay) that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. This area should be owned or controlled by the water supplier and limited to water supply activities.

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.



Underground Injection Control Regulations, 310 CMR 27.00.

4. Residential Land Uses – None of the residential land uses in the protection areas have public sewers available. Therefore, all discharge wastewater through 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 (UST and AST) and their associated fuel lines, 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 C and on www.mass.gov/dep/brp/dws/protect.htm, which provides BMPs for common residential issues.

✓ Work with planners to control new residential developments in the water supply protection areas.

Benefits of Source Protection

Source Protection helps protect public health and is also good for fiscal fitness:

- Protects drinking water quality at the source
- Reduces monitoring costs through the DEP Waiver Program
- Treatment can be reduced or avoided entirely, saving treatment costs
- Prevents costly contamination clean-up
- Preventing contamination saves costs on water purchases, and expensive new source development

Contact your regional DEP office for more information on Source Protection and the Waiver Program.

Additional Documents:

To help with source protection efforts, more information is available by request or online at mass.gov/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

For More Information

Contact Catherine Skiba in DEP's Springfield Office at (413) 755-2119 for more information and assistance on improving current protection measures.

Copies of this report have been provided to the public water supplier, board of health, and the town.

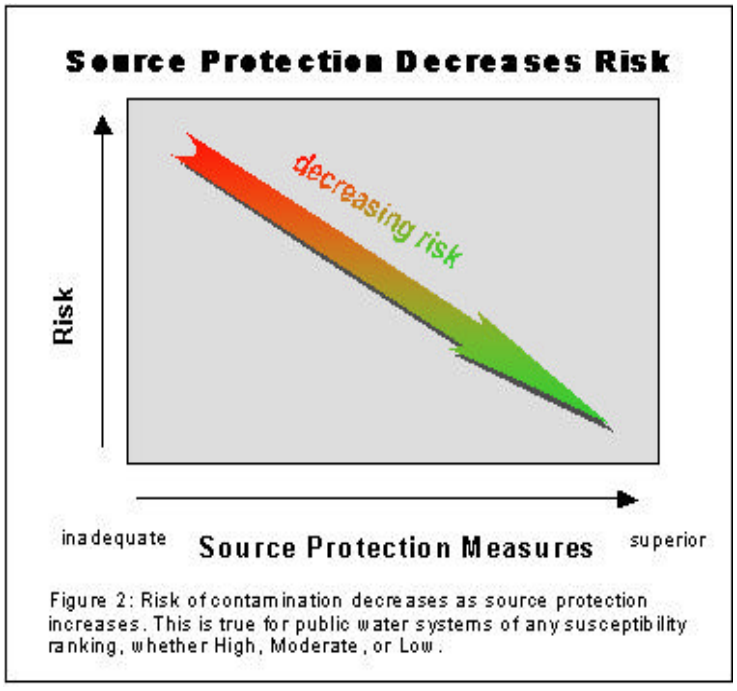


Figure 2: Risk of contamination decreases as source protection increases. This is true for public water systems of any susceptibility ranking, whether High, Moderate, or Low.

Potential Source of Contamination vs. Actual Contamination

The activities listed in Table 2 are those that typically use, produce, or store contaminants of concern, which, if managed improperly, are potential sources of contamination (PSC).

It is important to understand that a release may never occur from the potential source of contamination provided facilities are using best management practices (BMPs). If BMPs are in place, the actual risk may be lower than the threat ranking identified in Table 2. Many potential sources of contamination are regulated at the federal, state and/or local levels, to further reduce the risk.

Table 2: Land Use in the Protection Areas (Zones I and II)

For more information, refer to Appendix A: Regulated Facilities within the Water Supply Protection Areas

Activities	Quantity	Threat*	Potential Source of Contamination
Commercial			
Photo Processors	1	Moderate	Photographic chemicals: spills, leaks, or improper handling and storage.
Automobile Repair Shops	1	Moderate	Automotive fluids and solvents: spills, leaks, or improper handling and storage.
Residential			
Fuel Oil Storage	Numerous	Moderate	Fuel oil: spills, leaks, or improper handling.
Lawn Care	Numerous	Moderate	Pesticides: over-application or improper storage and disposal.
Septic Systems	Numerous	Moderate	Hazardous chemicals and microbial contaminants: improper disposal.
Miscellaneous			
Stormwater Drains/ Retention Basins	Few	Low	Debris, pet waste, and chemicals in stormwater from roads, parking lots, and lawns.
Small Quantity Hazardous Waste Generator	2	Moderate	Hazardous materials and waste oils: spills, leaks, or improper handling or storage.
Utility Substation Transformer	1	Low	Chemicals and other materials including PCBs: spills, leaks, or improper handling.
Wastewater Treatment Plant	1	Moderate	Treatment chemicals or equipment maintenance materials: improper handling or storage; wastewater: improper management.

Notes:

1. When specific potential contaminants are not known, typical potential contaminants or activities for that type of land use are listed. Facilities within the watershed may not contain all of these potential contaminant sources, may contain other potential contaminant sources, or may use Best Management Practices to prevent contaminants from reaching drinking water supplies.
2. For more information on regulated facilities, refer to Appendix A: Regulated Facilities within the Water Supply Protection Area information about these potential sources of contamination.
3. For information about Oil or Hazardous Materials Sites in your protection areas, refer to Appendix B: Tier Classified Oil and/ or Hazardous Material Sites.

*** THREAT RANKING** - The rankings (high, moderate or low) represent the relative threat of each land use compared to other PSCs. The ranking of a particular PSC is based on a number of factors, including: the type and quantity of chemicals typically used or generated by the PSC; the characteristics of the contaminants (such as toxicity, environmental fate and transport); and the behavior and mobility of the pollutants in soils and groundwater.

(Continued from page 4)

- ✓ Promote BMPs for stormwater management and pollution controls. Visit DEP's web site for additional information and assistance at http://www.state.ma.us/dep/brp/wm/nonpoint.htm.
- ✓ Supply BMPs to home owners for fuel storage.

5. Protection Planning – Currently, the Town does have water supply protection controls, however they do not meet DEP's Wellhead Protection regulations 310 CMR 22.21(2). Additionally, the protection area only covers the Zone II for the Lanesborough Fire District wells. Protection planning protects drinking water by managing the land area that supplies water to a well. A Wellhead Protection Plan coordinates community efforts, identifies protection strategies, establishes a timeframe for implementation, and provides a forum for public participation. There are resources available to help communities develop a plan for protecting drinking water supply wells.

Recommendations:

- ✓ Request that the town include the protection areas in the Tow Water Supply Protection District.

In addition to the land uses discussed above there are also Small Quantity and Very Small Quantity Generators of Hazardous Waste and/or Waste Oil, a utility substation transformer, a wastewater treatment plant, and stormwater drains located within the Zone II. Most of these activities are associated with the Berkshire Mall that is located in the extreme upstream edge of the Zone II. 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. Berkshire Spring should review and adopt the key recommendations above and the following:

- ✓ Educate residents within the Zone II on ways they can help you to protect the drinking water source, including regular inspection and maintenance of their septic systems.
- ✓ Work with emergency response teams to ensure that they are aware of the stormwater drainage in your Zone II and to cooperate on responding to spills or accidents.
- ✓ Partner with local businesses to ensure the proper storage, handling, and disposal of hazardous materials.
- ✓ Contact the electric utility to determine if PCBs have been replaced in any transformers that are identified within the Zone II. If PCBs are present, urge their immediate replacement. Keep the area near any transformer free of tree limbs that could endanger the transformer in a storm.

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. Berkshire Spring should use this SWAP report to encourage discussion of local drinking water protection measures.

4. Attachments

- Table of Regulated Facilities
- Map of the Public Water Supply (PWS) Protection Areas
- Recommended Source Protection Measures Fact Sheet

Top 5 Reasons to Develop a Local Wellhead Protection Plan

❶ Reduces Risk to Human Health

❷ Cost Effective! Reduces or Eliminates Costs Associated With:

- Increased groundwater monitoring and treatment
- Water supply clean up and remediation
- Replacing a water supply
- Purchasing water

❸ Supports municipal bylaws, making them less likely to be challenged

❹ Ensures clean drinking water supplies for future generations

❺ Enhances real estate values – clean drinking water is a local amenity. A community known for its great drinking water in a place people want to live and businesses want to locate.