

Source Water Assessment Program (SWAP) Report

For

Erving Paper Mills, Inc.



Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource Protection,
Drinking Water Program

Date Prepared:
March 19, 2001

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.

Table 1: Public Water System (PWS) Information

<i>PWS Name</i>	Erving Paper Mills, Inc.
<i>PWS Address</i>	97 East Main Street
<i>City/Town</i>	Erving, Massachusetts
<i>PWS ID Number</i>	1091005
<i>Local Contact</i>	Environment and Process Engineer, Marguerite McCollett
<i>Phone Number</i>	978-544-2711 ext. 209

<i>Well Name</i>	<i>Source ID#</i>	<i>Zone I (in feet)</i>	<i>IWPA (in feet)</i>	<i>Source Susceptibility</i>
Well # 1	1091005-01G	182	478	High
Well # 2	1091005-02G	182	478	High
Well # 3	1091005-03G	150	448	High

INTRODUCTION

We are all concerned about the quality of the water we drink. Many potential contaminant sources, including septic systems, road salt and improperly disposed of hazardous materials may threaten the quality of water from drinking water wells. Citizens and local officials can work together to better protect 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 contaminant sources, 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

Erving Paper Mills, Inc. has been in the paper manufacturing business since approximately 1908. They produce food service paper products such as napkins utilizing 100% waste (recycled) paper and are one of the area's largest recycled paper users. The main Erving Paper Mill (the mill) utilizes river water for paper production. Wells 1 (01G) and 2 (02G) supply potable water to the mill and are located approximately 50 feet and 30 feet north of Route 2, respectively; the mill is immediately south of Route 2. Erving Paper Mills uses the wells alternately. There is a single master meter that does not distinguish between wells. Well 3 (03G), serves the currently inactive and vacant storage and shipping site, the former Usher Plant. The Usher Plant, which is owned by the same company and located approximately 1 mile west of the mill along Route 2 has been vacant since 1995. Well 3 is located approximately 5 feet north of the building and immediately south (approximately 50 feet) of an active railroad track.

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.

Well 1, an 8-inch diameter well drilled to a depth of 485 feet below ground in 1977, extends above grade with its motor controls in a small shed near the wellhead. Well 2, a 6-inch diameter well drilled in 1941 to a depth of 238 feet, is located in a 5'x5'x6' concrete vault 200 feet west of Well 1. The wellhead (Well 2) is raised 24 inches above the vault floor. Well 3 is reportedly an 8-inch diameter well, drilled to a depth of 400 feet. The casing extends above grade and is set within a concrete well tile.

All three wells are bedrock wells. Geological maps of the area describe the bedrock as the Dry Hill Gneiss, a medium to fine grained granite-gneiss. Numerous bedrock outcrops are mapped in the immediate vicinity of the mill indicating shallow depth to bedrock. A large bedrock fault is mapped approximately 2,000 feet east of the mill wells separating the Dry Hill formation from the Crag Mountain Schist Formation. The bedrock aquifer utilized by the three Erving Paper Mills, Inc. wells has a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration from the ground surface into the aquifer.

Each of Wells 1 and 2 has a Zone I protective radius of 183 feet and an Interim Wellhead Protection Area (IWPA) radius of 478 feet. Well 3 has a Zone I radius of 150 feet and an IWPA radius of 448 feet. The Zone I and IWPA for Wells 1 and 2 are based on metered water usage data submitted by Erving Paper Mills, Inc. Since the storage facility is not active, the water usage and Zone I and IWPA for Well 3 are based on Title 5 septic system design flow volumes assuming the number of people that historically worked at the facility. Assessment information is presented in Tables 2 and 3.

Please refer to the attached maps of the Zone Is and IWPAs and Tables 2 and 3 for more information.

The Water Quality

For current information on monitoring results, please contact the Public Water System contact person listed above in Table 1.

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).

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 for Erving Paper Mills, Inc. which are potential sources of contamination. The overall ranking of susceptibility to contamination for the wells is high, based on the presence of at least one high threat land use or activity in the Zone I and IWPA, as seen in Tables 2 and 3.

Table 2: Table of Activities Common to the Protection Areas

Facility Type	Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Paper Mill	Active Railroad track	Well 3	All Wells	High	Maintenance, and accidents pose a potential threat
	Parking lots and driveways	Well 3	All Wells	Moderate	Limit road salt usage and provide drainage away from wells
	Transportation corridor (Route2)	Wells 1&2	All Wells	Moderate	Road salt, spills and runoff
	Sewage pipelines/pump station	All Wells	All Wells	Moderate	Gravity and pressure mains
	Storm drains	All Wells	All Wells	Low	Road salt, spills and runoff

* -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/.

Key Land Use Issues for the Wells include:

1. Non-conforming Activities in the Zone Is;
2. Industrial facility (paper mill)
3. Sewage pipelines
4. Transportation corridor
5. Railroad Right-of-Way.

1. **Zone Is** – All three wells are non-conforming with respect to MA DEP land use restrictions, which allow only water supply related activities in Zone Is. The Zone Is for Wells 1 and 2 contain nearly all paper mill buildings and activities, a sewer line, storm drains and Route 2. The Well 3 Zone I contains mill buildings, sewers, storm drains, a railroad track and storage facilities. Please note that systems not meeting DEP Zone I requirements must receive DEP approval and address Zone I issues prior to increasing water use, modifying systems or conducting any activities within Zone I. Also please note, wells that have been inactive for greater than five years must come into compliance with Zone I requirements prior to being put back on line.

- ✓ **Recommendation:** Do not conduct any additional activities within the Zone I and continue your commendable and diligent monitoring of activities within Zone I, use of BMPs and training for emergency response. Contact MA DEP prior to conducting any activities within Zone I.

2. **Industrial Facility** - The Erving Paper Mill is an active industrial facility and currently holds DEP Bureau of Waste

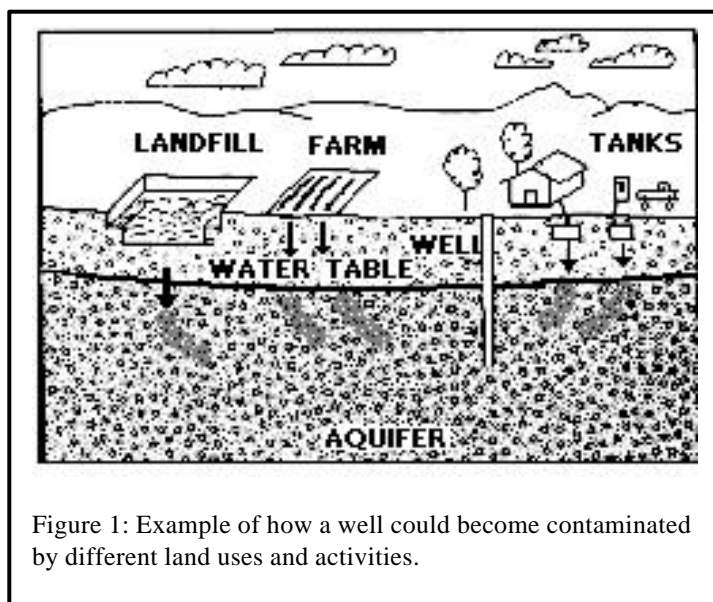


Figure 1: Example of how a well could become contaminated by different land uses and activities.

Table 3: Table of Activities Specific to Each Protection Area

Water Supply Protection Area for Wells 1 and 2

Facility Type	Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Paper Mill	Large Quantity Toxics User	Both	Both	High	Hazardous materials are used in the processes
	Small Quantity Hazardous Waste Generator	Both	Both	Moderate	Non-water supply structures in Zone I
	USTs and hazardous materials storage	No	No	--	USTs and hazardous waste storage are outside of the IWPA

Water Supply Protection Area for Well 3

Facility Type	Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
	Lawns and parking	Yes	Yes	Moderate	Vegetation control, 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 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.

For More Information:

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

More information relating to drinking water and source protection is available on DEP's web site at: www.state.ma.us/dep/brp/dws.

Prevention permits as a large quantity toxics user, small quantity hazardous waste generator, and air quality permittee. The entire area is sewered with the Publicly Owned Treatment Works (POTW) located immediately west of the mill. All of the facility's wastewater and one storm drain near the USTs is discharged to the POTW. The mill has a functioning waste recovery system on-site, contracts out hazardous waste disposal and is permitted to burn waste oil. Best Management Practices are used in the handling, storage, and shipping of the hazardous wastes. The hazardous waste storage facility and the fuel oil USTs at the mill are outside of the IWPA. The facility has a hazardous material emergency response plan that is periodically reviewed and updated as necessary and works cooperatively with the Town and local officials in coordination of water supply protection and emergency response.

✓ **Recommendations:** Continue reviewing and updating plans for emergency response and staff training regarding handling and management of hazardous materials. Continue the use of Best Management Practices.

3. **Sewage pumping station, pipelines and storm drains** – Gravity sewer lines, pumping station and storm drains are located within the Zone Is of the mill wells and the Usher Plant well. The storm drains direct runoff away from the wells and toward the river. The wastewater treatment plant and NPDES discharge locations are both topographically downgradient of the wells and outside of the IWPA. The POTW surface water discharge location is however upstream (1 mile) of the Usher Plant location. Well 3 is approximately 400 feet from the river.

✓ **Recommendations:** Maintain records of sewers and storm drains; continue monitoring the function of the sewerage pumping station.

4. **Railroad right-of-way** - The railroad track runs through the Erving Paper Mills, Inc. property and is within the IWPA of Wells 1 and 2 and the Zone 1 of Well 3. Rail corridors serving passenger and/or freight trains are potential sources of contamination due to chemicals released during normal use, maintenance, and accidents. Normal maintenance of a railroad right-of-way can introduce contaminants to a water supply through herbicide application for vegetation control. Accidents can release a variety of petroleum products and commercially transported chemicals.

✓ **Recommendations:** Be sure that the railroad is aware that you are a public water supply and consider incorporating rail accidents into your emergency response plan.

Implementing the recommendations below will reduce the system's susceptibility to contamination.

3. PROTECTION RECOMMENDATIONS

Erving Paper Mill, Inc. should review and adopt the following recommendations at the facilities:

Zone I:

- 3 Keep all new non-water supply activities out of the Zone I.
- 3 Please note that water systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use, modifying their system or conducting any additional non-conforming activities in Zone I.

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 water supplier, town boards, the town library and the local media.

- 3 Wells that have been inactive for greater than five years are required to meet Zone I restrictions prior to reactivation.
- 3 Consider well relocation if Zone I threats cannot be mitigated.
- 3 Prohibit public access to the well and pump house by locking facilities, gating roads, and posting signs.
- 3 Conduct regular inspections of the Zone I. Look for illegal dumping, evidence of vandalism, check any above ground tanks for leaks, etc.
- 3 Consider alternative sites for a new well and protect that land for future use through purchase or conservation restriction that would prohibit potentially threatening activities.
- 3 Continue your coordination with the DEP, State highway and local officials regarding diligence in protecting the water supplies through emergency response coordination.
- 3 Be sure that the railroad is aware that your facilities are public water supplies so that you can be notified of any accidents or threats from the railroad.
- 3 Secure the Usher Plant to discourage vandalism and further deterioration of the building.

Training and Education:

- 3 Continue staff training on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, certified operator, and other appropriate staff.
- 3 Maintain the drinking water protection area signs at key visibility locations.

Facilities Management:

- 3 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.

- 3 Monitor all oil/hazardous material storage tanks to incorporate proper containment and safety practices.
- 3 Implement Best Management Practices (BMPs) for the use of pesticides on facility property.
- 3 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:

- 3 Work with local officials in town to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- 3 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.
- 3 Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat 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

- Maps of the Public Water Supply (PWS) Protection Areas.
- Recommended Source Protection Measures Factsheet