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An Office of the Department of Health and Human Services
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Maine Source Water Assessment Program

Final Source Assessment Report

The 1996 amendments to the Federal Safe Drinking Water Act (SDWA) require each State to complete assessments for each public water supply source, which identify and describe conditions that may threaten the quality of water available to consumers. These assessments are the focus of Maine's Source Water Assessment Program (SWAP). The Drinking Water Program (DWP) is responsible for completing an assessment for each public water supply source and publishing the results for the benefit of the operators of each system and their customers. To achieve this goal, the results of each assessment will be made widely available to the general public.

The responsibility for protecting public water supply sources from contamination falls largely to public water suppliers. However, land use decisions are made by municipal officials, not water suppliers. This means that protection of public water supplies requires a partnership between water suppliers, state and federal regulators, local land owners, and municipalities. The lengths to which Maine communities have gone to protect the public water sources in their town/city vary greatly from place to place from land purchases at one extreme to no action at the other. In some cases, when a source is surrounded by protected land such as a state park, no further protection efforts may be required. In other cases, immediate and significant actions should be implemented in order to ensure that existing sources of drinking water are available for future generations. The type and selected course of action taken should be proportional to the level of risk.

The DWP's goal is to ensure that when a water supply is at risk for contamination, the citizens of Maine are made aware so that appropriate steps can be taken at the local level to minimize or eliminate the risk. That is the purpose of the **SWAP.** Through the Assessments, the DWP has *evaluated* each of the 2,600 public water supply sources, *assessed* each for the likelihood of contamination by existing and future activities, and is *making the results of these studies widely available* to the public.

The Program intends this Assessment to be a summary of the current and potential future risks to your public water supply source and as a guide for future protection activities. Water suppliers should receive one report page for each source currently utilized. Towns should receive a report page for each source with a protection area within the town boundary. As always, we are here to provide any help or assistance we can. Technical assistance requests can be directed to the Source Protection Section of the DWP at (207) 287-2070. Other resources are listed on page 4 of this report.

At this point the assessment process ends for the State and the time for protective action on your part begins. The DWP will be available to provide technical and in some cases financial assistance for protection efforts, but these efforts will have to be initiated locally. Source protection needs to include full participation from the water suppliers and local officials to be successful. The water supplier is responsible for providing safe drinking water to the population they serve. Town and City officials need to address this issue because contaminated drinking water sources can negatively impact the local economy. To ensure that this water is always safe to drink, you must become involved in overseeing the activities that could contaminate it.

The DWP, a state agency in the Department of Human Services, Bureau of Health, Division of Health Engineering, has completed an assessment of the susceptibility to contamination of the drinking water sources of **community, non-community non-transient, and transient public water systems** located in Maine. The assessment is a requirement of the Federal SDWA, a law originally passed in 1974 to ensure the safety of public water supplies. The water system has voluntarily cooperated with the DWP in completing this assessment. In the following sections of this report we have included our evaluation of this water supply source for existing contamination and the potential for future contamination

Explanation of Assessment Method for Groundwater Sources

Maine's groundwater assessments evaluate the contamination risk to each public water supply well by using an Environmental Protection Agency-approved evaluation methodology. Categories of risk evaluation for non-transient non-community and community public water sources include: risk based on: well type and site geology; existing and future risk of acute contamination; and existing and future risk of chronic contamination. The assessment criteria for non-transient non-community and community groundwater systems are outlined in the following table. Transient sources are assessed only for acute contaminants, shown in the top section of the table.

Assessment Matrix for Groundwater Sources:

All Sources: RISK BASED ON WELL TYPE AND SITE GEOLOGY		All Sources: RISK FACTORS FOR ACUTE CONTAMINANTS (4), (5)		
			Existing Risk	Future Risk
HIGH RISK	(1) Dug well (1) Spring	HIGH RISK	(2) Positive coliform bacteria test within previous three years OR (2) Nitrate greater than 5 ppm within previous three years	(1) Do not own or have legal control of all land within 150 feet of the well
MODERATE RISK	(1) Well points (1) Gravel well (1) bedrock well, less than 20 feet of overburden (1) bedrock well, overburden thickness unknown	MODERATE RISK	(1), (5) nearest acute Potential Contamination Site (PCS) less than 300 feet from well	(1) Do not own or have legal control of all land within 300 feet of the well OR 200-day time-of-travel zone
LOW RISK	(1) Bedrock well, greater than 20 feet of overburden	LOW RISK	(1) Nearest acute PCS greater than 300 feet from well (2) No positive coliform bacteria tests AND NO nitrate test greater than 5 ppm within previous three years	(1) Own or have legal control of all land within 300 feet of the well OR 200-day time-of-travel zone

Notes:

Sources of Information

(1) Wellhead Self Evaluation Form, Sanitary Surveys OR DWP Databases
(2) DWP Sample Master Database
(3) DEP Water Resources Database

Definitions:

(4) **Acute Contaminant**: A contaminant that can cause consumer illness immediately after consumption (i.e., pathogens, nitrate/nitrite)

(5) **Acute PCS**: Potential source of pathogens or nitrates, including septic system leach fields, manure pile or manure spreading, barnyards and animal grazing.

(6) **Chronic Contaminant**: A contaminant that can pose a health risk if consumed (even at very low doses) over many years.

(7) **Chronic PCS**: Potential source of chemical contaminants (e.i. leaking fuel storage tanks, landfills, Industrial waste disposal)

Community and NTNC: RISK FACTORS FOR CHRONIC CONTAMINANTS (6), (7)		
	Existing Risk	Future Risk
HIGH RISK	(1), (3), (7) 4 or more "significant" chronic PCS's within WHPA AND (2) detection of regulated/unregulated chronic contaminants	(1) Do not own or have legal control of entire WHPA
MODERATE RISK	(1), (3) 4 or more "significant" chronic PCS's within WHPA OR (2) Detection of regulated/unregulated chronic contaminants	(1) Own or have legal control of entire WHPA but NOT 2500-foot Phase II/V waiver radius
LOW RISK	(1), (3) 3 or fewer "significant" chronic PCS's within WHPA AND (2) NO detection of regulated/unregulated chronic contaminants	(1) Own or have legal control of WHPA AND 2500-foot Phase II/V waiver radius

Risk Based on Well Type and Site Geology

No drinking water source is completely free of threats to water quality, however, some are more likely to become contaminated than others by the nature of their construction and the geology of the site. For example, dug wells and springs test positive for the presence of coliform bacteria more frequently than do wells drilled into fractured bedrock overlain by a thick layer of low permeability silty clay. Therefore, dug wells and springs are considered high risk for contamination, bedrock wells with at least 20 feet of overburden are considered low risk, and all others (well points, gravel wells, and bedrock wells with less than 20 feet or unknown overburden thickness) are considered to be at moderate risk for being contaminated. Practically, the only means of reducing this risk is through replacement of the source.

Existing Risk of Acute Contamination

Acute contaminants, such as pathogens and nitrate/nitrite, are those which can make people sick immediately after being consumed. Many acute contaminants originate in human or animal feces. Possible sources include septic system leach fields, animal feed lots, and manure piles. The risk ranking in this category is based on the system's water testing history during the last three years, and the presence or absence of potential sources of acute contamination in the wellhead protection area.

Removal of septic systems within the wellhead protection area is the most effective means of reducing this risk. Where that is not feasible, implementation of a system management program, including regular tank pumping and system inspection, can be of assistance in managing the risk.

Future Risk of Acute Contamination

Evaluation of future risk assesses the potential for acute contaminant sources being introduced near the well by determining the level of control the owner of the water supply source has over future development near the source. Risk rankings in this category are based on the ownership or control by zoning or easement of the land within 300 feet of the well (or the 200-day time-of-travel zone for computer delineated recharge zones).

Water suppliers and municipalities should work together to manage development in their wellhead protection areas. This management should include restrictions on subsurface waste disposal and concentrated animal feeding, manure storage, and fertilizer application within the wellhead area.

Existing Risk of Chronic Contamination

Chronic contaminants are those which pose a health risk if consumed (even sometimes at very low doses) over many years. There are 89 contaminants which by law must not be present in public drinking water or which can only be present below some specified level (Maximum Contaminant Level). Examples of chronic contaminants include Methyl Tert-Butyl Ether (MTBE) and other gasoline additives, chlorinated solvents, many herbicides and pesticides, and many others.

The risk ranking in this category is based on the water testing history of the well and the presence or absence of at least 4 significant potential sources of chronic contamination (as indicated on a Wellhead Protection Program Self Evaluation Form) in the Wellhead Protection Area (WHPA). A high risk ranking indicates the presence of significant numbers of potential contamition sources and the detection of one of the 89 contaminants during the past three years.

Where large numbers of existing chronic contamination sources are present within the wellhead area, they should be encouraged to adopt best management practices (BMPs) which will reduce their risk of releasing contaminants to the aquifer. The DWP has BMP guidance available to assist municipalities, suppliers, and industry in implementing these practices. It may be possible, as part of this process, to assist the facility in re-engineering their process to reduce or eliminate the use of toxic chemicals. The Maine Department of Environmental Protection Pollution Prevention Program has resources that can be of assistance in this area.

Future risk of Chronic Contamination

The future risk of chronic contamination is evaluated based on land ownership or control through easements or town ordinances regulating development in the assessment area. If land ownership patterns and/or zoning permit the construction of facilities using

chronic contaminants, then the future risk is high. It is moderate if the area is covered by an effective wellhead protection ordinance, and low if the area is owned or controlled by easement by the public water supplier.

In order to reduce the potential for development that may degrade water quality, the DWP encourages suppliers to develop an active wellhead protection program including acquisition of land or easements on land that is currently undeveloped within their contributing area. We also strongly recommend that they work with municipalities to adopt and enforce a wellhead protection ordinance. The DWP and Maine Rural Water Association can provide technical assistance and sample language for inclusion in a wellhead protection ordinance. It is important that the supplier work with the landowners and residents in the contributing area to develop their understanding of their potential impact on the water supply. Educational materials and brochures are available to assist in this process.

Key State Agency Contact Information

Maine DHHS, Drinking Water Program (DWP)
www.maine.gov/dhhs/mecdc/environmental-health/water (207) 287-2070
Wellhead Protection grants
Land Acquisition loans
Best Management Practices
Assessment Assistance
Model Ordinance Language

Maine DEP
www.maine.gov/dep (207) 287-7688 (800) 452-1942
Underground Storage Tank Regulation
Pollution Prevention
Industrial Facilities Regulation
Development BMP's
Stormwater and wastewater discharge licensing

Maine DACF
www.maine.gov/dacf/index.shtml (207) 287-3871
Pesticides Control
Manure Management
Agricultural BMP's

Maine DACF, Municipal Planning Assistance Program
http://www.maine.gov/dacf/municipalplanning (207) 287-8050 (800) 662-4545
Comprehensive planning
Ordinance development
Sprawl management

Other Resources

Maine Rural Water Association: http://www.mainerwa.org (207) 729-6569
Maine Municipal Association: http://www.memun.org (207) 623-8428
Maine Water Utilities Association: http://www.mwua.org (207) 832-2265
Natural Resources Conservation Service: http://www.me.nrcs.usda.gov (207) 990-9100
George Mitchell Center, University of Maine: http://www.umaine.edu/WaterResearch (207) 581-2354

A more complete list of Other Resources is available from the DWP or the Mitchell Center.