

Water Supplement

Water and its many uses

The average person is made up 65% of water. It is used to transport nutrients and wastes. It also lubricates bones and keeps the skin from frying.

To keep healthy, an adult needs to take in 2.8-3.4 litres of water each day. forty-seven percent comes from drinking water and other liquids. The rest comes from internal chemical reactions and the intake of food. Water is given off by the body regularly. 15% through breathing, 20-30% through perspiration, and the rest by direct excretion. This adds up to about 2.3 litres of water given off each day.

If drinking water has too much dissolved minerals it can cause many internal disorders. Fro example, water high in sodium can lead to hypertension of heart problems.

On average, each household uses 1140 to 1820 litres of water a day. 28% is used for bathing and personal use, 23% is used for laundry and dishes, 45% is used in the toilet, and 4% is used for drinking and cooking.

Water is also used municipally for stores, offices, hospitals, and schools. Water is used in fire hydrants, and swimming pools.

by Candi Mackey

Sewage Systems Can Contaminate Water

A third area being studied under this agreement is the domestic sewage and septic systems on PEI. Forty percent of Islanders are not connected to a municipal service, therefore water and sewage is a major family and financial problem.

Safe disposal of human wastes is important to have a healthy ground water supply. It is important for the survival of birds, animals, and marine life as well as for human survival.

There are tow main types of sewage systems used in PEI. The first is the central system. Here sewage is removed by pipes and ducts connected to a single disposal area or treatment centre. Here inorganic and organic solids

are changed into a manageable sludge. These systems are expensive especially for rural areas and larger lots with greater distances between houses.

The second sewage system is the on-site system. These are used a lot in rural area where over 40% of the island homes used it.

Faulty materials poor construction, and inadequate maintenance can cause problems for any or all of the 3 major elements of a sewage system: The sewer pipe carries water from the house to the septic tank. The septic tank is a setting tank which separates wastes and breaks them down then emits them to the disposal field. Septic tanks con-

trol the rate of sewage flow that only liquids go to the disposal field. The disposal has perforated plastic or concrete pipes in parallel trenches filled with gravel or crushed rock. Treated sewage seeps in to soil through this rock and gravel.

Moderately permeable mixed soils are the best for disposal fields as sandy soils percolates wastes too quickly and the packed clays can cause backflow of wastes. A disposal field should also be installed with a minimum grade so that there will be a slow drainage of wastes into the ground. water level should be at least 1 and 1/2 meters below the disposal field.

by Candi Mackey

Island Groundwater in Trouble

Another area which is being studied under the agreement is PEI groundwater. Ground water begins as percipitation. It moves down through the soil to saturate spaces between soil particles and fractures and openings in bedrock. Saturated zones used to supply wells are called aquifers. Groundwater accounts for 95% of the worlds usable fresh water resources.

Prince Edward Island relies completely on groundwater for its domestic, municipal, and industrial water needs. There are, however, many threads to Island groundwater one threat is that of agricultural chemicals. Some highly dissolvable pesticides used in the potato industries have been found in domestic wells. There in both underground and above ground storage tanks.

is concern of the longterm effects and of the effects of nitrates on groundwater quality as high nitrate levels are a health hazard. Another problem is that of leaking gasoline and oil storage tanks. Leaking is common from tanks which are old. It can occur

Saltwater intrusion may occur in wells constructed near the ocean, especially when over pumping draws saltwater into the fresh water supply. This has occured in Summerside, Elliot River, and Brackley Beach Park.

In areas where septic tanks and private wells are used, septic tank discharges can contaminate wells. It can lead to bacteria and virusis in groundwater supplies and leaky sewage pipes.

Other problems include the seepage of animal wastes liq-

uid wastes from dump sites and sanitary landfills, and salt from road deciding in local groundwater supplies and private wells.

The groundwater study program will carry out three major projects. The first is the groundwater resource evaluation project. It will examine the quality and quantity of groundwater supplies and how they may be best developed. It will help determine the best ares for potential sources of contamination as waste disposal sites and service stations.

The second project is the Pesticides sampling project. It is set up to monitor wells for commonly used pesticides. Wells will be sampled in the spring and fall over a two year period. It will include nitrate and bacterial sam-

pling.

The last project is the Well Construction Pilot Project. Over two years, new well construction methods will be used on the Island. Water from these wells will be compared with wells suing current construction methods.

People owning a private septic system should look for signs of improper drainage such as spongy ground near the system or sewage odour in the basement. They should also pump it out every 3-5 years. People can also help prevent leaks or spills from home fuel tanks by monitoring tank levels and watching for corroded or leaking containers.

by Candi Mackey

Water, An Endangered Resource

In 1987 the federal government and the province of Prince Edward Island signed a three year agreement called the Canada - PEI Water Resource Management Agreement. Its aim is to study water usages here to protect the future of the water resources.

One of the areas being studied is the surface water such as streams, ponds, lakes and rivers. This water is used as home for fish and wildlife. Humans use it

for hunting, fishing, boating, and hiking. It is also very important for industries such as shellfish and commercial fishery, and for agriculture and forestry.

There are many treats to our surface water. One is siltation which rises from soil erosion. When vegetation is removed from streambanks or when livestock have unrestricted access to streams, surface waters are more likely to experience siltation and contamination which de-

grades fish habitat.

A third threat to surface water is bacterial contamination and nutrient - loading of PEI streams. This is caused by fertilizer and manure run off, untreated industrial wastes, sewage lagoon overflow, and uncontrolled access of cattle.

The last problem are in-stream abstractions which keep fish from reaching spawning grounds. These barriers can be naturally occuring such as beaver

damns or fallen trees or they may be a result of human activities like culverts and dams which are not placed properly.

The surface water program will carry out two projects to protect our water resources. The first is the Water-Shed Inventory Project. Twelve watersheds consisting of twenty-six rivers will be looked at. The inventory will look at present and future uses of PEI's surface water resources.

The second project consists of

demonstration projects. The projects will be on erosion prevention public education as well as a computer based system well be used to show land use and activities in watersheds. This makes it easier to learn the effects of irregular



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