The United States Congress passed the Safe Drinking Water Act in 1974, and reauthorized it in 1986 and 1996. The Environmental Protection Agency and the State of Oregon develop and enforce drinking water regulations to protect the public health. The City of Newberg has several programs that help protect and maintain the high quality of our water. This “multiple layer” approach includes:

**Protecting the Source**

Preventing pollution is the first priority in protecting our water sources. The City owns the land where the wells and springs are located. The springs are all in largely undeveloped and unthreatened areas. The land adjacent to the wells is leased for agricultural use, but with restrictions on use of the land designed to protect the groundwater from contamination by pesticides or other agricultural chemicals.

**Disinfection and Treatment**

To protect your health, the City’s drinking water is disinfected using chlorine. Water from the well field is safe to drink without treatment. However, it is relatively high in iron and manganese. Neither poses any health risk, but can cause the water to be discolored and affect the taste. Chlorine concentration is measured continuously at the treatment plant, and is checked at various points in the system and at the springs weekly. In addition to being disinfected, well water is filtered to remove iron, manganese and other contaminants, and treated with sodium hydroxide to minimize the leaching of lead and copper from household plumbing. Enough chlorine is added at the head of the plant to provide approximately one part per million (ppm) of residual chlorine after treatment. Water from the springs is chlorinated, but is not filtered or treated in any other manner.

**Monitoring the System**

The City of Newberg routinely monitors for contaminants in your drinking water according to federal and state laws. Samples are taken from 42 different sites. A selection of these sites are tested each week on a rotating basis throughout the year. All required testing is performed by independent, certified laboratories using EPA approved
methods. Process control is performed by City staff. Testing includes turbidity, conductivity, pH, iron concentration, temperature, coliform bacteria, trihalomethanes, haloacetic acids, nitrates, volatile organic compounds, synthetic organic compounds, arsenic, uranium, radium, and chlorine residual levels. Samples from a selection of residential taps are taken every three years and tested for lead and copper and those samples have met standards. Test results are summarized in the Water Quality Data section of this report.

Preventing Contamination

Another key to maintaining good water quality is to effectively manage the water distribution system. Preventing contamination of the water from outside sources is very important. The City requires that backflow prevention devices be installed on any connection to the water system that could present the risk of contaminating the water. The City also routinely flushes the distribution system to remove sediment from the water lines. In 2004 a comprehensive emergency response plan was developed to ensure that in the event of a natural disaster or terrorist attack the citizens of Newberg will continue to have an adequate supply of safe drinking water.

Newberg’s Water-Wise Demonstration Garden

The City of Newberg Public Works Department is developing a “Water-Wise” Demonstration Garden. The garden is located near the Newberg Public Library at the corner of Hancock & Blaine Streets.

Once completed, this 2500 square foot garden will display different plants, types of irrigation and water conservation methods. Over 44 varieties of trees, shrubs, ground covers and ornamental grasses are growing at this site. Irrigation includes a variety of spray nozzles and drip line tubing as well as a “no water” zone.

When the garden is completed, informational signs and a “Green Roof Kiosk” with a planted roof will be on the site to provide information. Turf-stone walkways will be installed, which allow ground cover to grow while still providing a pathway for foot traffic. Turf-stone provides excellent erosion control and soil stabilization. Come see these water-wise techniques in action and gather ideas for your own landscape!
Where Does Our Water Come From?

All of the City’s water comes from groundwater sources. Our primary source is a sand and gravel aquifer located just south of the Willamette River on property owned by the City of Newberg. This “raw” water is naturally filtered by the aquifer. It is pumped under the river through the new pipeline installed in 2006 to the Water Treatment facility for further treatment. The seven wells at this wellfield provide Newberg with 94% of its water supply.

Three springs north of the City on the slopes of Chehalem Mountain provide secondary sources of water. About 70 residences northwest of the City are served directly by the Snider and Skelton Spring system. The Oliver Spring feeds into the North Valley Reservoir as a supplemental source. Atkinson Spring is no longer attached to the city water system.

The City produced an average of 2.78 million gallons per day (mgd) of drinking water in 2007. The peak day production was 6.04 million gallons. Ninety-four percent (2.61 mgd) of the total production came from the wellfield.
About Drinking Water

All drinking water, including bottled water, may be expected to contain small amounts of contaminants. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material and can pick up substances from the presence of animals or human activity. It is important to remember that the presence of these contaminants does not necessarily pose a health risk. Contaminants that may be present include:

- Microbial contaminants, such as viruses and bacteria, which may come from wastewater treatment plants, septic systems, livestock operations, and wildlife.

- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming.

- Pesticides and herbicides, which may come from a variety of sources, such as agriculture, storm water runoff, and residential use.

- Organic chemicals, including synthetic and volatile organics, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

- Radioactive contaminants, which may be naturally occurring or be the result of mining or oil and gas production.

The Environmental Protection Agency (EPA) has set a Maximum Contaminant Level (MCL) and Maximum Contaminant Level Goal (MCLG), or an Action Level (AL), for each regulated contaminant. The City’s drinking water sources contain no contaminants at or near the MCL or AL. See the Water Quality Data section on the last page of this report. MCLs are set at very stringent levels.

*A person would have to drink two liters of water at the MCL every day for a lifetime to have a one-in-a-million chance of having the described health effect.*
Frequently asked Questions:

How do I pay my water bill?
Water billing and payments are generated by the Finance Department. You can make your payment at 401 E Third Street, Newberg, Oregon 97132. A new service allows you to pay your water bill online! Log on to set up your online account at www.ci.newberg.or.us or call 503-538-9425.

Does Newberg’s water supply contain Fluoride?
The City of Newberg does not add Fluoride to the water however there are trace amounts that occur naturally in the water supply.

Is Newberg’s water hard or soft?
Our water supply is considered moderately hard—measured at 56 milligrams per liter (ppm).

Is there Chlorine in my Drinking Water?
The City is required to maintain a “chlorine residual” in the water. This is to protect the water from microbial contamination as it travels from the Treatment Facility to your home. There is approximately 1 milligram per liter of chlorine in a consumer’s water (ppm).

How can I participate in decisions about Newberg’s water system?
A Citizen Rate Review Committee meets periodically to review water rates. The committee reviews current and future water demand, operation and maintenance costs, needed improvements, reserve funds, and other factors to set the rates that ensure revenue for proper operation of the system. The committee reports findings to the City Council. The Council makes determinations on rates and the water system. If you would like to be involved, contact the Finance Department (503) 538-9425.
Water Awareness. Conservation... Why does it matter?

Water is a valuable resource. Of all the water on Earth, only about 2.8% is fresh water available for us to drink. So protecting and understanding your water is important to you and your family.

**Conservation Tips:**

**TOILETS:**
- Replace your toilet with a high efficiency unit
- Install a tank displacement device
- Don’t use your toilet as a wastebasket
- Check for leaks once a year

**FAUCETS:**
- Install low-flow faucet aerators
- Fix leaks
- Shorten shower time by 5 minutes

**KITCHEN & LAUNDRY:**
- Keep chilled water in your refrigerator instead of running the faucet
- Defrost food in the refrigerator instead of running water
- Run the dishwasher only when it’s fully loaded
- Check out front-loading washers

For information about water efficient appliances, visit: [www.energystar.gov](http://www.energystar.gov)

**Outdoors:**

Water used for landscaping is typically about 30-40 percent of a household’s water use during the summer months. Make every drop count!

- Deep-soak your lawn about 1 inch weekly and avoid runoff.
- Water during the cool of the day: late evening, early morning.
- Set a kitchen timer or invest in a sprinkler timer. Outdoor faucets flow 300 gallons per hour.
- If it doesn’t grow, don’t water it. Don’t water any paved areas and avoid windy days.
- Install drip irrigation systems.
- Trim grass at a higher mower setting, to provide extra shade to roots.
- Lay mulch around trees and plants.
- Weeds are water thieves, robbing your plants of water.
- Use a broom, not a hose, to clean driveways and sidewalks.
- Use a bucket when you wash your car and don’t let the water run.
- Cover your pool to help prevent evaporation.

For information on native plants that require less water, visit the Native Plant Society of Oregon at: [www.npsoregon.org](http://www.npsoregon.org) or [www.oregon.nativeplants.com](http://www.oregon.nativeplants.com)
Backflow Devices – Preventing Contamination in the Drinking Water

What's a Backflow Device?
Do you have a backflow device? Not sure? Most residents don’t realize that the sprinkler system or water fountain in their yard or the fire system in their house has a backflow prevention device on it. This device prevents water that has entered the fountain or sprinklers from accidentally flowing back into the drinking water lines.

The Program
As required by Oregon Statute and City Code, backflow devices must be tested annually to ensure they are functioning. The city will mail a letter to each residence notifying that it’s time to test the backflow devices. Tests are conducted by Certified Testers hired by the property owner. Each property owner may choose which tester they want to hire. The tester will check the device, make repairs as authorized by the owner and send the City a report showing the test was completed. If you have a new device installed—you or your contractor need to notify the City that a device is now in service. Even common properties owned by Home Associations must have an annual backflow device inspection.

Not sure if you have a device?
Call the Water Treatment plant at 503-537-1239 and we will help you find the device on your property. Need a list of certified testers? We can mail you a list or you can visit the City website for a link to the State of Oregon’s website.
NEWGROW Compost

The City of Newberg offers an excellent product that is a favorite of landscapers all over the region. NEWGROW Compost is available all year to the public!

NEWGROW Compost exceeds all EPA and DEQ standards. It is low in metals, free of pathogenic organisms, and will not attract rats, flies, or other pests. There are no restrictions on its use. It is both a low-grade fertilizer and an excellent soil amendment. NEWGROW may be used without restriction on outdoor ornamental plants, as a potting soil amendment, on lawns and trees, and on nursery plots. Call ahead to check quantities: 503-537-1252.

Our beautiful water-wise garden outside Newberg’s historic public library.

1 Cubic Yard Free with Coupon
NEWGROW Compost
2301 Wynooski Road, Newberg
Phone: 503-537-1252
Hours: M-F 8:30-3:30
Exp. Date: 12/31/08
Delivery not provided.
One coupon per household.
Make Every Drop Count!

Only water plants that really need extra water and only at night to prevent evaporation. Don’t water the sidewalk or street. Check for leaks. Look around your house and see where you can stop water waste so everyone can stay cool this summer!
For Kids!

Think about this. In one kitchen, in one apartment, in one building, on one block, a boy goes to the faucet and fills a glass with water. At the same moment, thousands of people in Newberg are also getting water from the same pipes.

1. How is it possible?

2. Where does it all come from?

3. How come it doesn’t run out?

Crossword Fun

DOWN
1. Process where water turns to gas and rises into the air.
2. A substance to use in gardens to reduce evaporation.
3. A long dry period of weather causes this.
5. Water travels through this to your home.
7. What you should use to clean the sidewalk.
9. A pipe in the ground that is used to draw water from an aquifer.

ACROSS
4. An underground “pocket” of water.
6. The number of gallons of water used brushing teeth.
8. The city you live in.

Kids! Want to learn more? Ask an adult to help you visit these great websites!

www.epa.gov/safewater/kids, www.groundwater.org, or www.conserveh2o.org. Or visit your Library!
Are there special health concerns I should know about?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants, can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

EPA/CDC (Centers For Disease Control) guidelines on appropriate means to lessen the risk of infections by cryptosporidium and other microbiological contaminants are available from the EPA Safe Drinking Water Hotline (1-800-426-4791).

The City of Newberg's drinking water continues to meet or exceed all federal and state requirements. We are committed to providing you with the highest quality water possible. If you have questions or would like information that is not in this report, contact the Water Treatment Supervisor at 503-537-1289. Reports from previous years are available at City Hall, 414 E. First St., Newberg, Oregon 97132.

Testing

Total Coliform Bacteria

Total coliform bacteria are naturally occurring and not generally a health risk, but their presence is an indication of possible contamination of the water by harmful bacteria or other microorganisms. Any positive sample requires retesting at the location of the sample, and at two locations within five service connections upstream and downstream of the positive sample site. Of 263 tests, 262 (99.6%) were negative for total coliform in 2007.

Chlorine

The City is required to maintain a chlorine residual in the distribution system to provide post-treatment protection from microbial contamination. Chlorine residual is monitored continuously at the Water Treatment Plant. Weekly testing is done at each spring and in the distribution system to ensure that the water is adequately disinfected.

Turbidity

Turbidity is a measure of the cloudiness of water. Chlorination is less effective in inactivating bacteria in turbid waters. If turbidity exceeds the 5 NTU MCL, boil water notices are issued to affected residences.
**Nitrates**
Testing is required on each source (the well field and each spring) annually.

**Trihalomethanes and Haloacetic Acids**
Testing is done annually on water from the distribution system. Trihalomethanes and haloacetic acids are byproducts of disinfection with chlorine.

**Inorganic Compounds**
Testing is done for 18 inorganic compounds on each source every nine years. No regulated inorganics were found in Newberg’s water in the most recent testing done in February 2002, except for low levels of copper (<8% of the allowable level). Arsenic is tested every 3 years. The most recent testing in October 2005 showed no arsenic was detected.

**Organic Compounds**
Testing is done for 21 volatile organic compounds (VOCs) and 42 synthetic organic compounds (SOCs) every three years. VOCs include petroleum products and solvents. SOCs include pesticides, PCBs, and other man-made organic chemicals. No VOCs or SOCs were detected in Newberg’s drinking water in testing done in 2004 and 2005 (for SOCs) and 2007 (for VOCs).

**Lead and Copper**
EPA requires testing at the customer’s tap in homes most likely to have elevated lead and copper levels. Testing was done annually from 1998, when the City began adding sodium hydroxide to the water to minimize the leaching of lead and copper from household plumbing, through 2003. Testing is now done on a three-year rotation.

**Radioactive Contaminants**
Source waters have been tested for gross alpha emissions every four years. New rules now also require testing for uranium and radium. Testing frequency is based on the amount of radiation detected in previous tests.

**Unregulated Contaminants**
EPA required testing for 11 unregulated contaminants twice between 2002 and 2005. Testing done on samples taken in December 2002 and June 2003 did not detect any of these contaminants in Newberg’s drinking water.
# City of Newberg Water Quality Data for the Year 2007

The following tables show the results of the City of Newberg's water quality analyses. All regulated contaminants that have been detected, even in minute amounts, are shown in the table. The table contains the name of the substance, the water source, the amount detected, the maximum level allowed by regulation (MCL or AL), the ideal goal for public health (MCLG), and the likely source of the substance.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Water Source</th>
<th>Level</th>
<th>MCL</th>
<th>MCLG</th>
<th>Units</th>
<th>Date Tested</th>
<th>Major Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrate</td>
<td>Wellfield</td>
<td>ND</td>
<td>10</td>
<td>10</td>
<td>ppm</td>
<td>8/2007</td>
<td>Runoff from fertilizer use, erosion of natural deposits, septic systems, wastewater discharges</td>
</tr>
<tr>
<td></td>
<td>Oliver Spring</td>
<td>1.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Snider Spring</td>
<td>2.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skelton Spring</td>
<td>1.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Atkinson Spring</td>
<td>1.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TTHM¹</td>
<td>Distribution System</td>
<td>31.7</td>
<td>80</td>
<td>-</td>
<td>ppb</td>
<td>8/2007</td>
<td>Byproduct of disinfection with chlorine</td>
</tr>
<tr>
<td>HAAS²</td>
<td>Distribution System</td>
<td>12.1</td>
<td>60</td>
<td>-</td>
<td>ppb</td>
<td>8/2007</td>
<td>Byproduct of disinfection with chlorine</td>
</tr>
<tr>
<td>Copper²</td>
<td>Wellfield</td>
<td>.014</td>
<td>AL=1.3</td>
<td>1.3</td>
<td>ppm</td>
<td>2/2002</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td></td>
<td>Skelton Spring</td>
<td>.102</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oliver Spring</td>
<td>.007</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Snider Spring</td>
<td>.010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dist. System</td>
<td>ND</td>
<td></td>
<td></td>
<td></td>
<td>5 &amp; 10.2007</td>
<td></td>
</tr>
<tr>
<td>Turbidity³</td>
<td>Oliver Spring</td>
<td>2.6</td>
<td>5</td>
<td>-</td>
<td>NTU</td>
<td>2007</td>
<td>Soil runoff</td>
</tr>
<tr>
<td></td>
<td>Snider Spring</td>
<td>18.9</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Skelton Spring</td>
<td>12.7</td>
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<td></td>
<td>Atkinson Spring</td>
<td>3.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radium</td>
<td>Oliver Spring</td>
<td>1.835</td>
<td>5</td>
<td>0</td>
<td>pCi/L</td>
<td>11/2003</td>
<td>Erosion of natural deposits</td>
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<td>226/228</td>
<td>Snider Spring</td>
<td>0.829</td>
<td></td>
<td></td>
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<td>Skelton Spring</td>
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<td></td>
<td>Atkinson Spring</td>
<td>1.75</td>
<td></td>
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<tr>
<td>Uranium</td>
<td>Oliver Spring</td>
<td>.026</td>
<td>30</td>
<td>0.0</td>
<td>ppb</td>
<td>11/2003</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td></td>
<td>Snider Spring</td>
<td>.024</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skelton Spring</td>
<td>.033</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Atkinson Spring</td>
<td>.061</td>
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<td></td>
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</tbody>
</table>

## Lead³

<table>
<thead>
<tr>
<th>Substance</th>
<th>Date Tested</th>
<th>90th Percentile¹</th>
<th>Level</th>
<th>Goal</th>
<th>Units</th>
<th>Homes Exceeding AL</th>
<th>Major Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>9/2006</td>
<td>13</td>
<td>15</td>
<td>0.0</td>
<td>ppb</td>
<td>6.7%</td>
<td>Corrosion of household plumbing</td>
</tr>
</tbody>
</table>

## Copper⁵

<table>
<thead>
<tr>
<th>Substance</th>
<th>Date Tested</th>
<th>90th Percentile¹</th>
<th>Level</th>
<th>Goal</th>
<th>Units</th>
<th>Homes Exceeding AL</th>
<th>Major Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>9/2006</td>
<td>0.35</td>
<td>1.3</td>
<td>1.3</td>
<td>ppm</td>
<td>0%</td>
<td>Corrosion of household plumbing</td>
</tr>
</tbody>
</table>
Abbreviations

ppm  = parts per million or milligrams per liter
ppb  = parts per billion or micrograms per liter
pCi/L = picocuries per liter
mgd  = million gallons per day
TTHM = total trihalomethanes
HAA5 = haloacetic acids
NTU  = nephelometric turbidity units
MCL  = Maximum Contaminant Level (The highest level that is allowed in drinking water. The MCL is set as close to the MCLG as feasible using the best available treatment technology.)
MCLG = Maximum Contaminant Level Goal (The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.)
AL  = Action Level (The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.)
ND  = None Detected

Footnotes

1 Values are maximum recorded of all sources sampled during 2007.
2 Measured at the source (wellfield and springs).
3 Values shown are the highest recorded during the year. Skelton Spring exceeded 5 NTU for one week in January and one week in December. Snider Spring exceeded 5 NTU for one week in December.
4 The 90th percentile value is the level that 90% of the homes tested were at or below. If the 90th percentile value exceeds the AL, water suppliers must take steps to reduce lead and/or copper levels.
5 Measured at residential taps

Sodium

Although there is no MCL for sodium, the level of sodium in the City’s water may be of concern to individuals on sodium-restricted diets. Sodium levels of water from the springs ranged from 5.3 to 6.3 ppm in samples taken in 2002. Water produced by the treatment plant contained 22.5 to 29.0 ppm in samples taken in 2007. If you are concerned about the levels of sodium in your drinking water, please consult your physician.

Chlorine

EPA has recommended a maximum residual disinfectant level goal of 4.0 ppm. Maximum recorded chlorine residuals in 2007 were 1.60 ppm at the Water Treatment Plant, 1.89 ppm at Skelton Springs, 1.39 ppm at Oliver Spring, and 1.39 ppm at Snider Spring. (Atkinson Spring was not used in 2007.) The maximum chlorine residual recorded in the distribution system in 2007 was 0.97 ppm.