

# CITY OF RICHMOND

## 2011 Annual Water Quality Report

68225 Main Street • P.O. Box 457 • Richmond, MI 48062 • 586.727.7571

### “RIGHT TO KNOW” RULE PASSED

In 1998, a Federal rule was passed to ensure that consumers of community water supplies receive annual documentation of drinking water quality. The City of Richmond provides your drinking water and is pleased to present you with this annual water quality report. Our goal is to provide you with a safe and dependable water supply. This report will illustrate that we are achieving this goal.

### WATER QUALITY RESULTS

The City of Richmond routinely monitors your drinking water according to Federal and State laws. The table on the inside of this report shows the results of monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2010, unless otherwise noted. **The test results show that your drinking water meets or surpasses all Federal and State requirements.**

### IMPROVING WATER AESTHETICS

Every year your water distribution system is flushed in April and October to remove iron deposits. This improves the taste of the water and helps prevent water from appearing rusty in color.

### WHERE DOES YOUR WATER COME FROM?

Your drinking water is drawn from underground through seven different wells. The raw well water drawn from underground benefits from natural filtration as it travels through sand and gravel. In addition, each well has its own treatment equipment to inject the water with chlorine (to inactivate potentially harmful bacteria in the water) and polyphosphate (to control iron). Finished water is distributed directly to customers or stored in a 400,000 gallon elevated storage tank for use during peak demands.

### HEALTH AND SAFETY INFORMATION

Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA’s Safe Drinking Water Hotline (800-426-4791). The sources of both tap and bottled drinking water include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive materials, and can also pick up substances resulting from animal or human activity.

Contaminants that may be present in source water include: ***Microbial contaminants***, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; ***Inorganic contaminants***, such as salts and metals, which can be naturally occurring, or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming; ***Pesticides and herbicides***, which may come from a variety of sources such as agriculture, urban storm water run off and residential uses; ***Organic chemical contaminants***, including synthetic and volatile organic chemicals, which are by-

products of industrial processes and petroleum production, and can also come from gas stations, septic systems, and urban or agricultural runoff (i.e., pesticides and herbicides); or **Radioactive contaminants**, which can be naturally occurring or the result of oil and gas production and mining activities. **All of these contaminants were below the level of concern in Richmond's drinking water.**

In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

## **INFORMATION FOR VULNERABLE POPULATIONS:**

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 guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from EPA's Safe Drinking Water Hotline, 800-426-4791.

## **DEFINITIONS**

**Parts per million (one in one million):** The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram. One ppm can be equated to a single penny in \$10,000.

**Parts per billion (one in one billion):** The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram. One ppb is a single penny in \$10,000,000.

**Picocuries per liter (pCi/L)** - One pCi/L can be equated to a single penny \$10,000,000,000 (\$10 billion).

**Maximum Contaminant Level Goal (MCLG)** - The MCLG is the level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs allows for a margin of safety.

**Maximum Contaminant Level (MCL)**- The MCL is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible, using the best available treatment technology.

**Action Level (AL)** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

**Treatment Technique (TT)** - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

**Maximum Residual Disinfectant Level (MRDL)** – Highest level of a disinfectant allowed in drinking water. There is evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG)** – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**Na** - not applicable.

**Here are the contaminants that were detected in our water. ALL ARE BELOW ALLOWED LEVELS.  
Not listed are the hundreds of contaminants tested for, but not detected in our water.**

**Some tests are not required on an annual basis. For these, the most recent test result is listed.**

## TEST RESULTS FOR 2011

| contaminant                                                                            | test date | unit  | low                         | high           | MCLG        | MCL                                                                                                                                                                                                                                                 | likely sources                                                                                                                                             |
|----------------------------------------------------------------------------------------|-----------|-------|-----------------------------|----------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Regulated Inorganic Parameters (sampled at the treatment system tap)</b>            |           |       |                             |                |             |                                                                                                                                                                                                                                                     |                                                                                                                                                            |
| Fluoride                                                                               | 2011      | ppm   | 0.6                         | 1.8            | 4           | 4                                                                                                                                                                                                                                                   | Erosion of natural deposits                                                                                                                                |
| <b>Regulated Metals Parameters (sampled at treatment system tap)</b>                   |           |       |                             |                |             |                                                                                                                                                                                                                                                     |                                                                                                                                                            |
| Arsenic <sup>1&amp;2</sup>                                                             | 2011      | ppb   | 2                           | 6              | 0           | 10                                                                                                                                                                                                                                                  | Erosion of natural deposits                                                                                                                                |
| Barium                                                                                 | 2010      | ppm   | 0.13                        | 0.20           | 2           | 2                                                                                                                                                                                                                                                   | Erosion of natural deposits                                                                                                                                |
| Selenium                                                                               | 2010      | ppb   | 0                           | 0              | 50          | 50                                                                                                                                                                                                                                                  | Erosion of natural deposits                                                                                                                                |
| Chromium                                                                               | 2010      | ppb   | 0                           | 10             | 100         | 100                                                                                                                                                                                                                                                 | Erosion of natural deposits                                                                                                                                |
| <b>Unregulated Parameters (sampled at the treatment system tap)</b>                    |           |       |                             |                |             |                                                                                                                                                                                                                                                     |                                                                                                                                                            |
| Sodium <sup>3</sup>                                                                    | 2011      | ppm   | 502                         | 154            | Na          | Na                                                                                                                                                                                                                                                  | Erosion of natural deposits                                                                                                                                |
| <b>Copper and Lead Testing (sampled in the distribution system at individual taps)</b> |           |       |                             |                |             |                                                                                                                                                                                                                                                     |                                                                                                                                                            |
| Lead <sup>4</sup>                                                                      | 2011      | ppb   | 90 <sup>th</sup> Percentile |                | Na          | AL = 15                                                                                                                                                                                                                                             | Corrosion of household plumbing systems<br>0 of 20 samples exceeded the Action Level                                                                       |
|                                                                                        |           |       | 2                           |                |             |                                                                                                                                                                                                                                                     |                                                                                                                                                            |
| Copper                                                                                 | 2011      | ppm   | 0.390                       |                | Na          | AL = 1.300                                                                                                                                                                                                                                          | Corrosion of household plumbing systems;<br>erosion of natural deposits; leaching from<br>wood preservatives.<br>1 of 20 samples exceeded the Action Level |
| <b>Regulated Contaminants (sampled from distribution system taps)</b>                  |           |       |                             |                |             |                                                                                                                                                                                                                                                     |                                                                                                                                                            |
|                                                                                        |           |       | Highest Detected            | Range Detected | MCLG        | MCL                                                                                                                                                                                                                                                 | Major Sources in Drinking water                                                                                                                            |
| Total Trihalomethanes TTHM                                                             | 2010      | ppb   | 61                          | 7.2 – 61       | Na          | 80                                                                                                                                                                                                                                                  | By-product of drinking water chlorination                                                                                                                  |
| Haloacetic Acids                                                                       | 2010      | ppb   | 11                          | 0 - 11         | Na          | 60                                                                                                                                                                                                                                                  | By-product of drinking water chlorination                                                                                                                  |
| Chlorine Residual                                                                      | 2011      | ppm   | 0.99                        | 0 –0.99        | MRDGL<br>4  | MRDL<br>4                                                                                                                                                                                                                                           | By-product of drinking water chlorination                                                                                                                  |
| <b>Radiological Contaminants</b>                                                       |           |       |                             |                |             |                                                                                                                                                                                                                                                     |                                                                                                                                                            |
| Gross Alpha                                                                            | 2006      | pCi/L | 5                           | <3 – 5         | 0           | 15                                                                                                                                                                                                                                                  | Erosion of natural deposits                                                                                                                                |
| Radium 226                                                                             | 2006      | pCi/L | 1                           | <1 - 1         | 0           | 5                                                                                                                                                                                                                                                   | Erosion of natural deposits                                                                                                                                |
| Radium 228                                                                             | 2006      | pCi/L | <1                          | <1             | 0           | 5                                                                                                                                                                                                                                                   | Erosion of natural deposits                                                                                                                                |
| <b>Source Water Assessment<sup>5</sup> (2003)</b>                                      |           |       |                             |                |             |                                                                                                                                                                                                                                                     |                                                                                                                                                            |
| <b>Susceptibility to Contamination</b>                                                 |           |       | <b>low</b>                  | <b>mod</b>     | <b>high</b> | The Source Water Assessment Report is based on hydrogeological information, tritium testing, and potential sources of contamination within the Wellhead Protection Area. The susceptibility is based on a six tier scale from “very low” to “high”. |                                                                                                                                                            |
| Wells No. 3A, 4A, 8, & 10<br>Wells No. 9, 11 & 14                                      |           |       | X                           | X              |             |                                                                                                                                                                                                                                                     |                                                                                                                                                            |

1. While your drinking water meets EPA’s standard for arsenic, it does contain low levels of arsenic. EPA’s standard balances the current understanding of arsenic’s possible health effects against the costs of removing levels of arsenic from the drinking water. EPA continues to research the health effects of low levels of arsenic, which is a

- mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems. The City has constructed arsenic removal plants at the affected well sites.*
- 2. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.*
  - 3. Unregulated contaminants are those for which EPA has not established drinking water standards. Monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.*
  - 4. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Richmond is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the safe Drinking Water Hotline at 1-800-426-4791 or at <http://water.epa.gov/drink/info/lead>.*
  - 5. A copy of the DEQ, Source Water Assessment Report may be viewed or obtained at the Department of Public Works.*

## **PUBLIC INFORMATION**

Interested citizens are welcome to attend City Council meetings to participate in the decisions affecting Richmond's water system. Meetings are held the first and third Monday of each month at 7:00 p.m. at City Hall, located at 68225 Main Street.

## **QUESTIONS? COMMENTS?**

Water system operations staff work year-round to provide quality water to residents. If you have any questions or comments, or would like to receive more specific information about Richmond's water system, please feel free to call Paul Fejedelem, Public Service Director at 586.727.7575.

## **PUBLICATION and COPIES**

Because the number of water customers is less than 10,000, the City of Richmond is allowed to publish the Water Quality Report in the newspaper. As such, copies of the Report will not be mailed to each water customer. Copies of this report are available at the Richmond City Hall, telephone number 586.727.7571. The Report can also be accessed on the City's Home Page at <http://www.cityofrichmond.net>

## **WELLHEAD PROTECTION PLAN (WHPP)**

The WHPP reflects the City's commitment to protection of its community resources, the public health of its citizens, and the natural environment. This WHPP was prepared in accordance with guidance documents available from the Michigan Department of Environmental Quality (MDEQ)-Drinking Water and Radiological Protection Division (DWRPD).

The City is a groundwater-based public water supply. The City relies entirely on groundwater for its residential, commercial, and industrial water supply needs. The City's water system provides water to the City and portions of Lenox, Casco, and Richmond Townships. The City currently maintains approximately 35 miles of various-sized water distribution piping and has one elevated storage tank.

The WHPP provides background information about the City's water supply system, a summary of each of seven elements of the City's WHPP, recommended procedures for maintaining the WHPP, an implementation schedule, and a guide to resources that can be used as this plan is implemented. Supporting information is provided in associated tables and appendices. The WHPP can also be accessed on the City's Home Page at <http://www.cityofrichmond.net>