The table in this report shows which contaminants were detected in your drinking water. Before trying to read and understand the table, there are a few terms which need to be defined:

**MAXIMUM CONTAMINANT LEVEL GOAL (MCLG)**: the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**MAXIMUM RESIDUAL DISINFECTION LEVEL (MRDL)**: The level of a disinfectant allowed in drinking water. There is growing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**MAXIMUM RESIDUAL DISINFECTION LEVEL GOAL (MRDLG)**: The level of a disinfecting agent allowed in drinking water. There is growing evidence that addition of disinfectants is necessary for control of microbial contaminants.

**TYPICAL SOURCE OF CONTAMINATION**: Erosion of natural deposits, discharge from drilling, runoff from fertilizer, erosion of natural deposits. Disinfectants are added to inactivate disease-causing pathogens. Organic deposits may provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. Turbidity is a measure of the clarity of the water and has no health effects. However, turbidity can interfere with disinfection and may provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms.

**The table and chart below provide important information on lead in your drinking water. You may wish to have household water testing information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead**

**What are the results from last year's testing?**

<table>
<thead>
<tr>
<th>CONTAMINANTS DETECTED</th>
<th>MCLG</th>
<th>MCL</th>
<th>CITY WATER RESULTS</th>
<th># OF SAMPLES</th>
<th>RANGES OF DETECTIONS</th>
<th>VIOLATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MICROBIOLOGICAL COMPOUNDS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Total Coliform Bacteria | 0 | presences observed in | 4% | 0 (2/31/2011) and | 0 | 0% | No | Naturally present in the environment.
| E. coli Bacteria | 1 | See footnote | (10/1/2011) | 0 | 0% | No | Human and animal fecal waste.
| **RADIOACTIVE CONTAMINANTS** | | | | | | |
| Combined Radium | 0 | 0 ppb | 0 ppb | 0 | 0% | No | No.
| Gross Alpha | 0 | 0.06 ppb | 0 | 0 | 0% | No | No.
| Gross Beta | 0 | 5 ppb | 0 | 0 | 0% | No | No.
| **INORGANIC COMPOUNDS** | | | | | | |
| Copper | 1 | 1.3 ppm | 1.3 ppm (AL) | 0 | 0 | 0% | No | Cu.
| Lead | 2 | 0.01 ppm | 0.01 ppm (AL) | 0 | 0 | 0% | No | No.
| Fluoride | 4 | 0.97 ppm | 0.97 ppm (AL) | 0 | 0 | 0% | No | No.
| Barium | 2 | 0.01 ppm | 0.01 ppm (AL) | 0 | 0 | 0% | No | No.
| Nitrates | 10 | 0.34 ppm | 0.34 ppm (AL) | 0 | 0 | 0% | No | No.
| **DISINFECTANTS AND DISINFECTION BY-PRODUCTS** | | | | | | |
| (TTM) Total Trihalomethanes | n/a | 80 ppb | 45 ppb | 7-71 ppb | 0 | 0% | No | Rebound from disinfection.
| Haloacetic Acids (HAA5) | n/a | 60 ppb | 44 ppb | 29-66 ppb | 0 | 0% | No | Rebound from disinfection.
| Free Residual Chlorine | n/a | 1.51 ppm | 1.51 ppm (AL) | 0 | 0 | 0% | No | No.

**What are these contaminants and their potential health risks?**

**TURBIDITY** is a measure of the clarity of the water and has no health effects. However, turbidity can interfere with disinfection and may provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms.

**TOTAL COLIFORM AND E. COLI BACTERIA**: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful bacteria may be present. E. coli in particular may indicate the presence of human or animal fecal material. Coliforms and E. coli can cause short-term effects such as diarrhea, cramps, nausea, headaches or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

**COMBINED RADIUM, AND ALPHA AND BETA particles** are naturally occurring. Certain minerals are radioactive and may emit forms of radiation. When those minerals are eroded into the source water, testing may indicate their presence.

**FLUORIDE** is added at the water treatment plant to promote strong teeth. The 1994 Federal LEAD and COPPER Rule mandates a household testing program for those substances. The value shown is the mean from this household-testing program. No lead or copper was found in the drinking water at the WTPs.

- **LEAD**: Infants and children who drink water containing lead in excess of the action level could experience decreased IQ and physical and mental development. Children could show slight deficits in attention span and learning abilities.
- **COPPER**: Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short period of time could experience gastrointestinal distress. People with Wilson’s disease should consult their doctor.

**NITRATES** is an inorganic form of nitrogen found primarily in fertilizers, sewage, and runoff from natural deposits. Infants below the age of six months who drink water containing nitrate in excess of the MCL could suffer from methemoglobinemia, a condition that decreases the oxygen-carrying capacity of the blood. Infants below the age of six months who drink water containing nitrate in excess of the MCL could suffer from methemoglobinemia, a condition that decreases the oxygen-carrying capacity of the blood. Infants below the age of six months who drink water containing nitrate in excess of the MCL could suffer from methemoglobinemia, a condition that decreases the oxygen-carrying capacity of the blood. Infants below the age of six months who drink water containing nitrate in excess of the MCL could suffer from methemoglobinemia, a condition that decreases the oxygen-carrying capacity of the blood.

**What do all these numbers mean?**

Most importantly, this information shows that your drinking water met and exceeded all regulatory requirements during 2011. We are fortunate to have reliable sources for our drinking water needs and well-operated treatment facilities. Additional information is provided below that will give you more details on the issue of lead detected in your water. Given the health risks associated with long term exposure to these contaminants at levels in excess of the MCL, please visit www.charlottesville.org/waterquality.

**CRYPTOSPORIDIUM IN DRINKING WATER**

Cryptosporidium is a gastrointestinal pathogen found in surface waters throughout the United States. Ingestion of Cryptosporidium may cause an abdominal infection characterized by nausea, diarrhea, and abdominal cramps that can last for several days. Children and other immune-compromised people are at risk of developing a potentially life-threatening illness. In November 2003, RWBA began a two year study to determine the occurrence of this parasite in the raw sources for each of the three Urban Area WTPs. Results of monitoring do reveal its occasional presence in very small concentrations (< 0.05 organisms per liter) in our reservoirs. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100% removal. The RWBA makes every effort to optimize the filtration processes at all of the WTPs to ensure the greatest Degree of Cryptosporidium removal.

**What is Water Hardness?**

If substantial amounts of either calcium or magnesium, both nontoxic minerals, are present in drinking water, the water may be described as hard. The hardness of finished water in the City water system averages 24 mg/L, which is equivalent to 1.4 grains per gallon. This is mainly calcium. The water may be described as soft to moderately hard.

**Fluoridated water is highly supported by the Virginia Department of Health, the American Medical Association, American Dental Association, Centers for Disease Control (CDC) and the majority of health professionals in the U.S. Please visit www.cdc.gov/fluoridation if you would like further information on the health impacts of fluoridated water.**

**Chloramines**

Coming Soon… a new water treatment process in 2014 to change the secondary disinfection to chloramines. Visit www.charlottesville.org/water for more information.

**What if I am immuno-compromised?**

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 nursing home patients, and people receiving chemotherapy for cancer treatment. These people should seek advice about drinking water from their healthcare providers. USEPA/CDC guidelines on appropriate means to minimize the risk of infection by Cryptosporidium and other microbial contaminants are available from EPA’s Safe Drinking Water Hotline (800-426-4791) or visit their website (www.epa.gov/safewater).
Rivanna Water and Sewer Authority (RWSA), and the City of Charlottesville (City), in partnership with the Virginia Department of Health (VDH), work to ensure that you receive a safe and reliable supply of drinking water. As part of that ongoing commitment, we are providing you with this report on the quality of your drinking water. While this annual report is currently required by the United States Environmental Protection Agency (USEPA), we wish to use this opportunity to assure you that the quality of your drinking water meets or exceeds all regulatory requirements and your expectations for safety, reliability and quality. RWSA collects, stores, and treats the water, then the City buys the treated water from RWSSA and distributes it to you through their distribution system.

RWSSA operates two water treatment plants (WTP) that provide water to the City: the South Rivanna WTP and the Observatory WTP. Each plant employs both chemical and physical treatment processes before releasing water into the distribution system. Sodium Hypochlorite is used at both South Rivanna and Observatory Fluaride is added at all treatment plants to promote good dental health. The water treatment plant that provides water to your tap may vary from day to day depending on the daily production of water at each plant, the level of storage in the system and your location. The North Rivanna WTP draws water from the North Fork Rivanna River and serves customers located in northern Albemarle County. The South Rivanna WTP draws water from the South Fork Rivanna Reservoir. The Observatory WTP draws water from both the Ragged Mountain and Sugar Hollow Reservoirs. Under a new program developed by VDH, a source water assessment for the Albemarle/Charlottesville Urban Area was completed by the VDH on March 25 and September 4, 2002. This assessment determined that the raw water sources named above may be susceptible to contamination. All surface water sources are exposed to a wide array of contaminants at varying concentrations and changing hydrologic, hydraulic and atmospheric conditions that promoted migration of contaminants from land use activities of concern within the assessment area. More specific information may be obtained by contacting the water system representative listed at the end of this insert.

Continuing our Commitment

Rivanna Water and Sewer Authority (RWSSA), and the City of Charlottesville (City), in partnership with the Virginia Department of Health (VDH), work to ensure that you receive a safe and reliable supply of drinking water. As part of that ongoing commitment, we are providing you with this report on the quality of your drinking water. While this annual report is currently required by the United States Environmental Protection Agency (USEPA), we wish to use this opportunity to assure you that the quality of your drinking water meets or exceeds all regulatory requirements and your expectations for safety, reliability and quality. RWSSA collects, stores, and treats the water, then the City buys the treated water from RWSSA and distributes it to you through their distribution system.

RWSSA operates two water treatment plants (WTP) that provide water to the City: the South Rivanna WTP and the Observatory WTP. Each plant employs both chemical and physical treatment processes before releasing water into the distribution system. Sodium Hypochlorite is used at both South Rivanna and Observatory Fluaride is added at all treatment plants to promote good dental health. The water treatment plant that provides water to your tap may vary from day to day depending on the daily production of water at each plant, the level of storage in the system and your location. The North Rivanna WTP draws water from the North Fork Rivanna River and serves customers located in northern Albemarle County. The South Rivanna WTP draws water from the South Fork Rivanna Reservoir. The Observatory WTP draws water from both the Ragged Mountain and Sugar Hollow Reservoirs. Under a new program developed by VDH, a source water assessment for the Albemarle/Charlottesville Urban Area was completed by the VDH on March 25 and September 4, 2002. This assessment determined that the raw water sources named above may be susceptible to contamination. All surface water sources are exposed to a wide array of contaminants at varying concentrations and changing hydrologic, hydraulic and atmospheric conditions that promoted migration of contaminants from land use activities of concern within the assessment area. More specific information may be obtained by contacting the water system representative listed at the end of this insert.

Where does my water come from?

The information in this report has been collected and reported in accordance with the drinking water standards established by the USEPA and the VDH. In the year 2011, RWSSA collected and tested hundreds of hourly, daily and annual samples to ensure the quality of your water. Sample sources included the rivers and reservoirs from which the WTPs draw water, the WTPs themselves and numerous locations in the City distribution system.

The sources of drinking water may include rivers, lakes, streams, ponds, reservoirs, springs and wells.