What were the results from last year's testing?

The table in this report shows which compounds were detected in your drinking water. The following are a few terms which need to be defined to understand the table.

- *Maximum Contaminant Level Goal (MCLG):* the level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.
- *Maximum Contaminant Level (MCL):* the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as possible using the best available treatment technology.
- *Maximum Residual Disinfectant Level (MRDL)*: The highest level of a disinfectant allowed in drinking water. The 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.
- *ppb:* parts per billion, or micrograms per liter (ug/l). One part substance per billion parts of water.
- *ppm:* parts per million, or milligrams per liter (mg/l). One part substance per million parts of water.
- *pCi/l*: picocuries per liter. This is a measure of radioactivity.
- *Nephelometric Turbidity Unit (NTU):* a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- *Action Level (AL):* the concentration of a contaminant, which, if exceeded, triggers treatment or other actions by the water provider. This term is typically limited to discussion of lead and copper concentrations.
- *n/a:* not applicable.
- <: less than.

I. Primary Standards– Potential Health Risks	MCLG	MCL	*Scottsville* Water Result	# of Samples > AL	Range of Detections	Violation?	Typical Source of Contaminant
Microbiological Organisms; Related Measurements							
Total Coliform Bacteria [1]	0	Presence of coliform in >1 sample per month	0[2]		0 per month	No[2]	Naturally present in the environment
Fecal Coliform Bacteria (as E. coli) [1]	0	[3] See footnote	0[2]		0 per month	No[2]	Human and animal fecal waste
Turbidity (maximum single value)	n/a	1.0[4]	0.44 NTU		n/a	No	Soil runoff
Turbidity (% of monthly samples below 0.3 NTU)	n/a	95%[4]	99.8%		99.8-100%	No	Soil runoff
Radioactive Compounds							
Combined Radium[5]	0 pCi/l	5 pCi/l	<0.6 pCi/l		<0.6 pCi/l	No	Erosion of natural deposits
Gross Alpha [5]	0 pCi/l	15 pCi/l	<0.7 pCi/l		<0.7 pCi/l	No	Decay of natural deposits
Gross Beta [5,6]	0 pCi/l	50 pCi/l	1.5 pCi/l		1.5 pCi/l	No	Erosion of natural deposits
Inorganic Compounds							
Lead [7]	0 ppb	15 ppb (AL)	<2.46 ppb[8]	0	All <2.46 ppb	No	Corrosion of household plumbing systems; erosion of natural deposits
Copper [7]	1.3 ppm	1.3 ppm (AL)	0.75 ppm[8]	0	<0.05-0.84 ppm	No	Corrosion of household plumbing systems; erosion of natural deposits
Barium	2 ppm	2 ppm	0.027 ppm		0.027 ppm	No	Erosion of natural deposits; discharge from drilling wastes; discharge from metal refineries
Fluoride	4 ppm	4 ppm	0.57 ppm		0.57-0.80 ppm	No	Water additive that promotes strong teeth
Nitrates	10 ppm	10 ppm	0.54 ppm		0.54 ppm	No	Runoff from fertilizer use & erosion of natural deposits: leaching from septic tanks; sewage
Disinfectant & Disinfection By-product Contaminants							
Free Residual Chlorine	MRDL= 4 ppm	MRDLG= 4 ppm	1.46 ppm[9]		0.50-2.82 ppm	No	Water additive to control microbes (disinfectant)
Total Trihalomethanes (TTHMs)	n/a	80 ppb	41 ppb[10]		15-65 ppb	No	By-product from disinfection
Haloacetic Acids (HAAs)	n/a	60 ppb	42 ppb[10]		25-53 ppb	No	By-product from disinfection
II. Secondary Standards– Aesthetic Factors							
Chloride	n/a	250 ppm	7.4 ppm			No	Runoff/leaching of natural deposits
Iron	n/a	0.3 ppm	<0.05 ppm			No	Runoff./leaching of natural deposits
Manganese	n/a	0.05 ppm	<0.01 ppm			No	Runoff/leaching of natural deposits
pH	n/a	6.5-8.5	7.2-7.3 (monthly averages)			No	Runoff/leaching of natural deposits
Sulfate	n/a	250 ppm	28.2 ppm			No	Runoff/leaching of natural deposits
Total Dissolved Solids	n/a	500 ppm	115 ppm			No	Runoff/leaching of natural deposits
III. Other Parameters of Interest							
Alkalinity	n/a	n/a	45-66 ppm (monthly averages)			n/a	Runoff/leaching of limestone minerals from soil and rock
Conductivity	n/a	n/a	219 micromhos/cm			n/a	Runoff/leaching of natural deposits
Hardness	n/a	n/a	50 ppm			n/a	Runoff/leaching of limestone minerals from soil and rock
Sodium	n/a	n/a	23.4 ppm			n/a	Runoff/leaching of natural deposits

[1] Unit of Measurement for total and fecal coliform bacteria is the presence or absence of bacteria in a 100 ml sample.
[2] Of the routine samples collected in the Town of Scottsville during 2014, no sample indicated a positive result for total coliform bacteria or for fecal coliform bacteria.
[3] Fecal coliform MCL: A routine sample and a repeat sample are total coliform positive, and at least one is also fecal coliform positive.
[4] The MCL for turbidity is for no single measurement to exceed 1.0 NTU, and for 95% of all measurements to be below 0.3 NTU.
[5] Last sampled in May, 2011. Not required again by the VDH until 2020.
[6] EPA considers 50 pCi/l to be the level of concern for beta particles.
[7] Last sampled in August, 2013 from select residences. Not required again by the VDH until 2016.
[8] The value reported is the 90th percentile of all data (10 samples) collected.
[9] Highest quarterly, system-wide average.
[10] TTHM and HAA results are averaged over four quarters to determine compliance with the MCL.

What do all these numbers mean?

Of great importance, this information shows that your drinking water **met and exceeded all regulatory requirements during 2014**. We are fortunate to have a reliable source for your drinking water needs, and a well-operated treatment facility. Additional information is provided below that will give you more detail on each potentially harmful contaminant or compound detected in your

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface waters throughout the U.S. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection characterized by nausea, diarrhea, and abdominal cramps. Cryptosporidium may be spread through means other than drinking water. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at risk of developing a potentially life-threatening illness. In 2009, the RWSA began an EPA-mandated, one year, 24 sample study to determine the occurrence of Cryptosporidium in the raw source for the Scottsville WTP. The monitoring revealed the occasional presence of Cryptosporidium in very small concentrations (<0.05 organisms per liter, on average) in the Totier Creek Reservoir. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100% removal . The RWSA makes every effort to optimize the filtration process at all of the WTPs to ensure the greatest degree of Cryptosporidium removal. Based on the results of this study, our water source will be placed in the **lowest risk** category for exposure to Cryptosporidium.

What are the potential health risks associated with these contaminants?

- **Total and Fecal Coliform Bacteria**. Not detected in 2014. Coliforms are a large group of bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Fecal coliform bacteria, in particular, indicate a likely contamination from human or animal wastes. These microorganisms can result in short-term effects such as nausea, headache, cramps and diarrhea, and they pose a special health risk for infants, young children, the aged, and those with severely compromised immune systems.
- **Turbidity** is a measure of the clarity of water. On its own, elevated turbidity has no health effects. However, turbid water can interfere with disinfection and may provide a medium for microbial growth. Elevated turbidity may also indicate the presence of disease-causing organisms, including bacteria, viruses or parasites that can cause such symptoms as nausea, headache, cramps and diarrhea.
- **Combined Radium, Gross Alpha and Gross Beta**. These are naturally-occurring forms of radiation, resulting from certain minerals that are radioactive. When these minerals are eroded into the source water, radiation in the water may result. Some people who drink water containing radium, or alpha or beta emitters, over many years may have an increased risk of getting cancer.
- **Lead and Copper**. The 1994 USEPA Lead and Copper Rule mandates a household testing program for these metals, and the values reported in the chart above are from samples that were collected from select households. Infants and children who drink water containing lead in excess of the Action Level could experience delays in physical or mental development. Children could show deficits in attention span and learning abilities. Adults who drink this water over many years could possibly develop kidney problems or high blood pressure. **See the box for additional information on lead.** Copper is an essential nutrient, but some who drink water containing copper in excess of the Action Level could experience gastrointestinal distress in a relatively short period of time. Some who drink this water over many years could develop kidney or liver damage. Individuals with Wilson's disease should consult their doctor.
- **Barium** is a metal that is naturally-occurring in rock and the soil. Some people who drink water containing barium in excess of the MCL over many years may experience an increase in their blood pressure.
- **Fluoride** is an element added at the water treatment plants to promote strong teeth. Some people who drink water containing fluoride in excess of the MCL over many years could develop bone disease, with pain and tenderness of the bones. Children who drink water containing fluoride in excess of the MCL may develop mottled teeth. **See the box for additional information on fluoride.**
- **Nitrate** is a 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 develop "blue baby syndrome" in which there is a bluish coloration of the skin and shortness of breath. The infant can become seriously ill and, if untreated, may die.
- **Chlorine** is added at the treatment plant to inactivate disease-causing microbes. Some people who use water containing chlorine in excess of the MRDL could experience irritation of the eyes, nose and skin. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
- **Trihalomethanes and Haloacetic Acids** are compounds formed by the interaction of chlorine with naturally-occurring organic matter, and they are sometimes referred to as disinfection by-products. Chlorine is added at the treatment plant to inactivate disease-causing microbes, and organic matter is naturally present from leaves and decaying plants in the reservoirs and streams. Some people who drink water containing these compounds in excess of the MCL over many years may experience problems with their liver, kidneys or central nervous system, and may have an increased risk of getting cancer.