



Emerald Coast Utilities Authority
2010 Drinking Water Quality Report





Water is the essential element

needed for life and is continuously being recycled by nature. The water cycle begins when water evaporates from oceans and other surface waters and is transported to the atmosphere as water vapor, eventually falling back to earth in the form of rain, etc.

The sources of drinking water for both tap water and bottled water throughout our country include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material. It also can pick up substances resulting from the presence of animals or from human activity. These foreign materials are referred to as contaminants.



The purpose of this report is to provide information about the quality of water that ECUA delivers to you every day. Our goal is to serve you, our customer, with a high quality, dependable and safe supply of drinking water. We want you to be aware of the efforts we make to continually improve and maintain the quality of water we deliver and to protect our water resources.

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 stormwater 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 stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production and, can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by

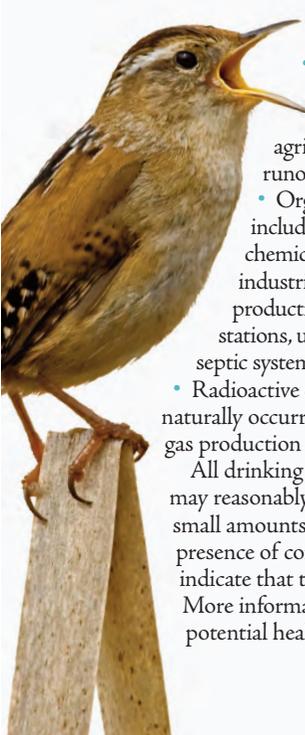
calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline at (800) 426-4791.

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 persons, and infants can be particularly at risk from infections. These people should seek advice from their health care providers about drinking water. EPA/CDC (Centers for Disease Control) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800) 426-4791.

Since 2006, ECUA has installed three new wells, removing three older wells from service in 2009. ECUA has 32 wells distributed throughout its service area. These wells pump water from the Sand-and-Gravel Aquifer. In general, ECUA customers receive water from the wells (two to five) located closest to their residence. Hence, the water delivered to a customer, at any set time, changes slightly based on the characteristics of the source water. Each well is considered a separate treatment plant, where water quality parameters are adjusted to comply with operating standards. We add: Calcium Hydroxide (lime) for pH adjustment; Phosphoric Acid (H3PO4) for corrosion control in the distribution system; and Chlorine gas (Cl2) for water disinfection. Granular Activated Carbon (GAC) filters are installed on eleven (11) wells, eight for organic contamination removal and three for iron removal. We also add Hydrofluosilicic Acid (H2SiF6) at select wells, as a source of fluoride treatment throughout the entire system.

The recharge area for ECUA wells is limited to the area of Escambia County, south of Cantonment. Because the Sand-and-Gravel Aquifer does not have a confining layer above it, virtually everything that falls on the ground has the potential to reach the main producing zone of the aquifer and affect the quality of our water supply. ECUA is well aware of this threat to the groundwater and has worked with Escambia County and the City of Pensacola in strengthening their Wellhead Protection Ordinances.

In order to ensure the safety of tap water, EPA has adopted regulations that limit the amount of certain contaminants in water provided by public water systems. FDA (Food & Drug Administration) regulations establish limits for contaminants in bottled water, which must provide the same protection for



public health. ECUA consistently monitors for contaminants in your drinking water according to Federal and State laws. ECUA monitors for several of these contaminants more frequently than the law prescribes.

The System-Wide Test Results table, included in this report, presents the results of compliance monitoring for the period of January 1 through December 31, 2010. As authorized and approved by the EPA, the State has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of our data, though representative, is more than one year old. The results in the Level Detected column for radiological contaminants, inorganic contaminants, synthetic organic contaminants including pesticides and herbicides, and volatile organic contaminants are the highest average at any of the sampling points or the highest detected level at any sampling point, depending on the sampling frequency. These values are used to determine system compliance. The column titled "Range Of Detection" lists the maximum and minimum levels measured at all ECUA wells.

In reviewing the System-Wide Test Results Table, you will see that the ECUA Drinking Water System is within full compliance, with no excursion of the Maximum Contaminant Level (MCL) encountered in 2010. One other quality parameter is apparent that shows the excellent quality of the ECUA water. The data in the Disinfectants/ Disinfection Products Table shows the low

level of byproduct generated in our water as TTHMs at less than 4.0 ppb and HAA5s at less than 1.0 ppb. These values are well below the MCL for these analytes of 80 ppb and 60 ppb, respectively. These low values reflect the low chlorine demand of the water. The Free Chlorine concentration also shows a constant monthly average in the range of 0.54 to 0.65 ppm.

The Lead and Copper results presented were collected in 2009. The results reported showed the ECUA Water System is in full compliance with the Lead and Copper Rule. However, two (2) of the 101 first-draw samples tested were above the 15 ppb Action Level (AL) limit.

Lead in drinking water is primarily from materials and components associated

with service lines and home plumbing. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. The Emerald Coast Utilities Authority 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 two 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 or at www.epa.gov/safewater/lead.

We are pleased to report that ECUA's drinking water meets all federal and state requirements! The ECUA Drinking Water System is within full compliance of Maximum Contaminant Level (MCL) limits as shown in the 2010 System-Wide Test Results table.

DEFINITIONS

We've provided the following definitions to help you better understand certain terms and abbreviations:

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 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 feasible using the best available treatment technology.

MAXIMUM RESIDUAL DISINFECTANT LEVEL (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing 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.

ACTION LEVEL (AL): The concentration of a contaminant, which if exceeded, triggers treatment or other requirements that a water system must follow.

NOT DETECTED (ND): Means not detected and indicates that the substance was not found by laboratory analysis.

PARTS PER MILLION (PPM) OR MILLIGRAMS PER LITER (MG/L): One part per million corresponds to one minute in two years or a single penny in \$10,000.

PARTS PER BILLION (PPB) OR MICROGRAMS PER LITER (MG/L): One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

PICOCURIES PER LITER (PCI/L): Picocuries per liter is a measure of the radioactivity in water, a quadrillionth of a curie per liter.

INITIAL DISTRIBUTION SYSTEM EVALUATION (IDSE):

An important part of the Stage 2 Disinfection Byproducts Rule (DBPR). The IDSE is a one-time study conducted by water systems to identify distribution system locations with high concentrations of trihalomethanes (THMs) and haloacetic acids (HAAs). Water systems will use results from the IDSE, in conjunction with their Stage 1 DBPR compliance monitoring data, to select compliance monitoring locations for the Stage 2 DBPR.

ECUA won the 2009 “Best-Tasting Water” award in the Region IX Florida Section/American Water Works Association’s taste test competition. This is the third time ECUA has been recognized with this honor.



Each year the drinking water distribution system experiences a number of disruptions caused by main breaks. These disruptions, generally isolated to small areas of the system, require the issuance of a Precautionary Boil Water Notice, (PBWN). ECUA makes every effort possible to keep our customers informed as to the quality of the water provided. It must be emphasized that a PBWN is a request from ECUA, the purveyor, to you the customer, to boil the water before drinking when these conditions exist. The status of all PBWNs can be obtained any time of day by calling ECUA Water SCADA at 969-3343, or by visiting www.ecua.fl.gov.

ECUA employees work continually to provide our customers with the highest quality water possible, but we need your help, too.

As mentioned above, the Sand-and-Gravel Aquifer is our sole source of drinking water. While this aquifer is a prolific source of water for our community, it is very susceptible to contamination caused by activities on the land surface. Because the aquifer is so vulnerable to contamination, we ask that all our customers, as well as residents, business owners and visitors to Escambia County, help us protect our water supply.

ECUA is required to monitor your drinking water for total coliform bacteria, along with other water quality parameters, on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. This is a process that we take very seriously and implement carefully each month. In its 29-year history, ECUA has never missed taking the required, or greater, number of samples in this monitoring program. However, during the month of December 2010, we did not properly monitor for total coliform bacteria as required. We collected a total of 147 samples from our distribution system during this period. Based on our population size, we are required to collect at least 150 samples each month.

What Does This Mean?

Total coliform bacteria are generally not harmful themselves. Coliform bacteria typically are naturally present in the environment and are used as an

indicator that other, potentially harmful, bacteria may be present.

What happened? What is being done?

We typically conduct more than the required 150 monthly samples on a routine basis, and ended up being short by three samples in December 2010 due to a combination of factors: colder than normal temperatures led to many spigots being inaccessible for testing (many were covered or wrapped for freeze protection), higher-than-normal rain days (rain can contaminate a sample), and a few less working days due to the

Christmas holidays contributed to the three-sample lapse. Our laboratory staff simply missed the final calculation until it was too late.

We redoubled our efforts to ensure that the missed samples were taken, and that our sampling protocol was back to normal in January. Public notification of this Tier 3 Violation was completed on April 18, 2011.

If you have any questions about this report or concerning your water utility, please contact the ECUA QA/QC Manager at 969-6689. If you want to learn more about ECUA in general, you are welcome to attend any of our regularly scheduled meetings. ECUA Board and Committee meetings are open to the public. Board and

Committee meetings are held in the boardroom of the ECUA Human Resources Building, 9250 Hamman Avenue, Ellyson Industrial Park. For a complete schedule of Board and Committee meetings, please contact the Executive Assistant to the Board, Ms. Linda Iversen, at 969-3302, or visit us on-line at www.ecua.fl.gov.

HELP PREVENT GROUNDWATER CONTAMINATION BY USING:

- ECUA’s free monthly pick-up of household hazardous waste. Any ECUA customer can request pick-up of items such as paint, used motor and cooking oil, lawn and garden chemicals and swimming pool chemicals.
- Free bulk materials pick-up for ECUA recycling customers. Once monthly each recycling customer can request a pick-up of bulk materials, such as household electronics, tires, batteries and empty propane tanks.

We want our valued customers to be informed about their water utility.

2010 Drinking Water Quality SYSTEM-WIDE TEST RESULTS TABLE



MICROBIOLOGICAL CONTAMINANTS

Contaminant and unit of measurement	Dates of sampling	MCL Violation	Highest Monthly %	MCLG	MCL	Likely source of contamination
Total coliform bacteria	Jan-Dec 09	No	2.5%	0	For systems collecting at least 40 samples per month: presence of coliform bacteria in >5% of monthly samples	Naturally present in the environment

Contaminant and unit of measurement	Dates of sampling	MCL Violation	Level Detected	Range of Results	MCLG	MCL	Likely source of contamination
-------------------------------------	-------------------	---------------	----------------	------------------	------	-----	--------------------------------

RADIOLOGICAL CONTAMINANTS (FOR WELL-SPECIFIC DATA, SEE TABLE 1)*

Alpha emitters (pCi/l)	Mar 08-July 09	No	6.0	ND - 6.0	0	15	Erosion of natural deposits
Radium 226+228 (pCi/l)	Mar 08-July 09	No	5.0	ND - 5.0	0	5	Erosion of natural deposits

INORGANIC CONTAMINANTS (FOR WELL-SPECIFIC DATA, SEE TABLE 2)*

Barium (ppm)	May-Dec 08	No	0.5	0.1 - 0.5	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Cadmium (ppb)	May-Dec 08	No	0.6	ND - 0.6	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium (ppb)	May-Dec 08	No	0.7	ND - 0.7	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Cyanide	May-Dec 08	No	9.0	ND - 9.0	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Fluoride (ppm)	May-Dec 08	No	0.8	ND - 0.8	4	4	Erosion of natural deposits; discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth when at optimum levels between 0.7 and 1.3 ppm
Lead (ppb)	May-Dec 08	No	1.1	ND - 1.1	0	15	Residue from man-made pollution such as auto emissions and paint; lead pipe, casing, and solder
Mercury (ppb)	May-Dec 08	No	0.2	ND - 0.2	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Nickel (ppb)	May-Dec 08	No	1.0	ND - 1.0	n/a	100	Pollution from mining and refining operations. Natural occurrence in soil
Nitrate (as Nitrogen) (ppm)	May-Dec 10	No	4.2	ND - 4.2	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	May-Dec 08	No	9.2	2.3 - 9.2	n/a	160	Salt water intrusion, leaching from soil

VOLATILE ORGANIC CONTAMINANTS

1,1-Dichloroethylene (ppb)	Jan-Dec 10	No	0.28	ND - 0.6	7	7	Discharge from industrial chemical factories
Tetrachloroethylene (ppb)	Jan-Dec 10	No	0.96	ND - 1.24	0	3	Discharge from factories & dry cleaners

STAGE 1 DISINFECTANTS AND DISINFECTION BY-PRODUCTS

Disinfectant or Contaminant and Unit of Measurement	Dates of Sampling	MCL or MRDL Violation	Level Detected	Range of Results	MCLG MRDLG	MCL or MRDL	Likely source of contamination
Chlorine (ppm)	Jan-Dec 10	No	0.57	0.09 - 1.23	MRDLG/4	MRDL/4	Water additive used to control microbes
Haloacetic Acids five HAA5 (ppb)	July-Sept 10	No	0.78	0.62 - 1.08	n/a	MCL/60	By-products of drinking water disinfection
TTHM (Total trihalomethanes) ppb	July-Sept 10	No	4.88	4.74-5.13	n/a	MCL/80	By-products of drinking water disinfection

LEAD AND COPPER (TAP WATER)

Contaminant and unit of measurement	Dates of sampling	AL Violation Y/N	90th percentile	No. of sites exceeding the AL	MCLG	AL	Likely source of contamination
Copper (tap water) (ppm)	June-Aug 09	No	0.22	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (tap water) (ppb)	June-Aug 09	No	1.7	2	0	15	Corrosion of household plumbing systems, erosion of natural deposits

UNREGULATED CONTAMINANTS

Contaminant unit of measurement	Level Detected	Range Result	Likely source of contamination
Chloroform (ppb)	0.11	ND - 1.11	By-products of drinking water chlorination
Dibromochloromethane (ppb)	0.002	ND - 0.31	Runoff/leaching from soil fumigant used on soybeans and cotton
Methyl tert-butyl-ether (ppb)	0.295	ND - 3.92	Leaching from gasoline storage tanks
Trichlorofluoromethane (ppb)	0.0023	ND - 0.46	By-products of drinking water chlorination

Emerald Coast Utilities Authority has been monitoring for unregulated contaminants (UCs) as part of a study to help the U.S. Environmental Protection Agency (EPA) determine the occurrence in drinking water of UCs and whether or not these contaminants need to be regulated. At present, no health standards (for example, maximum contaminant levels) have been established for UCs. However, we are required to publish the analytical results of our UC monitoring in our annual water quality report. If you would like more information on the EPA's Unregulated Contaminants Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

* Tables 1 and 2, and a map of the ECUA water system showing the location of all wells, are available by contacting Mr. Don Mitchell at (850) 969-6689, by calling ECUA Customer Service at (850) 476-0480, or by visiting us online at www.ecua.fl.gov.

The FDEP conducted a statewide assessment of public drinking water systems in 2009. No assessment of this system has been made to date.