The City of Florence Water Department

2011 Annual Water Quality Report

The City of Florence Water/Wastewater Department is pleased to provide you, our customer, our annual Water Quality Report for 2011. The City of Florence Water Department is committed to providing the residents of Florence and Lauderdale County with the safest and highest quality drinking water possible. Daily testing is done at our treatment facilities using sophisticated equipment and the most advanced procedures, and the water produced by the City of Florence Water Department meets or surpasses both state and federal standards for both appearance and safety. This annual "Water Quality Report", which is required by the Safe Drinking Water Act (SDWA), tells you where your water comes from, what tests by independent laboratories show about it, and other information you should know about your drinking water.

But, most importantly:

The City of Florence's drinking water met or surpassed all federal and state drinking water standards during 2010.

For information about how you can participate in decisions or for general information about your drinking water, call us at (256) 760-6490 or consult our Web site at www.florenceal.org Information can also be obtained from the U.S. Environmental Protection Agency (EPA) Web site at ***www.epa.gov/safewater/***.

Overview

The City of Florence's drinking water is supplied by surface water from the Tennessee River and Cypress Creek. Modern, state of the art surface water treatment facilities using the most up to date technology treats the water from these two sources. In addition, we pump ground water from two wells in the Killen and Center Star areas of Lauderdale County, which is blended with the treated surface water sources. The well sources supply these areas only in Killen.

The City of Florence utilizes mixing, flocculation, sedimentation and filtration in their treatment process. Also, chlorine is used for disinfection, fluoride for dental protection, and lime for pH treatment.

What do these tables mean?

It's easy! Our water is tested to assure that it is safe and healthy. The **Table of Primary Contaminants** provides an overview of some primary contaminants that are known to pose a health risk to humans. In the **Table of Detected Contaminants**, the column marked Amount Detected shows the highest test results during the year. Sources of Contaminant Level show where this substance usually originates. The **Table of Secondary Contaminants** lists regulated contaminants that my cause cosmetic or aesthetic effects in drinking water. Columns headed MCL and MCLG refer to:

Action Level: the concentration of a contaminant that triggers treatment or other requirements which a water system must follow.

Maximum Contaminant Level or 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 technology.

Maximum Contaminant Level Goal or 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.

Tables of Primary Contaminants

At high levels some primary contaminants are known to pose a health risks to humans. These tables provides a quick glance of any primary contaminant detections.

Contaminant	MCL	Amount Detected
Bacteriological		
Total Coliform Bacteria	< 5%	1%
Turbidity	TT	0.17

Contaminant	MCL	Amount Detected
Radiological		
Beta/photon emitters (mrem/yr)	4	ND
Alpha emitters (pci/l)	15	ND
Combined radium (pci/l)	5	ND
Uranium	30	ND

Contaminant	MCL	Amount Detected
Inorganic		
Antimony	.006	ND
Arsenic	.01	ND
Asbestos (MFL)	7	ND
Barium	2	ND
Beryllium	.004	ND
Cadmium	.005	ND
Chromium	.1	ND
Copper	.050	ND
Cyanide	.20	ND
Fluoride	4	1.27
Lead	.015	ND
Mercury	2	ND
Nitrate	10	1.49
Nitrite	1	ND
Selenium	.05	ND
Thallium	.002	ND

Contaminant	MCL	Amount Detected
Organic Chemicals		
2,4-D	70	ND
2,4,5-TP (Silvex)	50	ND
Acrylamide	TT	ND
Alachlor	2	ND
Atrazine	3	ND
Benzo(a)pyrene[PHAs]	200	ND
Carbofuran	40	ND
Chlordane	2	ND
Dalapon	200	ND
Di-(2-ethylhexyl)adipate	400	ND
Di(2-ethylhexyl)phthlates	6	ND
Dinoseb	7	ND
Diquat	20	ND
Dioxin[2,3,7,8-TCDD]	30	ND
Chloramines	4	ND
Chlorite	1	ND
HAA5	60	34.6
Bis(2-ethylhexyl)phthalate	. 006	ND
Endothall	100	ND
Endrin	2	ND
Epichlorohydrin	TT	ND
Glyphosate	700	ND
Heptachlor	400	ND
Heptachlor epoxide	200	ND
Hexachlorobenzene	1	ND
Hexachloropentadiene	1	ND
Lindane	200	ND
Methoxychlor	40	ND
Oxamyl [Vydate]	200	ND
PCBs	500	ND

Contaminant	MCL	Amount Detected
Pentachlorophenol	1	ND
Picloram	500	ND
Simazine	4	ND
Toxaphene	3	ND
Benzene	.005	ND
Carbon Tetrachloride	.005	ND
Chlorobenzene	.1	ND
Dibromochloropropane	200	ND
0-Dichlorobenzene	.6	ND
p-Dichlorobenzene	.075	ND
1,2-Dichloroethane	.005	ND
1,1-Dichloroethylene	.007	ND
Cis-1,2-Dichloroethylene	.07	ND
trans-1,2-Dichloroethylene	.1	ND
Dichloromethane	5	ND
1,2-Dichloropropane	.005	ND
Ethylbenzene	.700	ND
Ethylene dibromide	50	ND
Styrene	.1	ND
Tetrachloroethylene	.005	ND
1,2,4-Trichlorobenzene	.07	ND
1,1,1-Trichloroethane	.2	ND
1,1,2-Trichloroethane	.005	ND
Trichloroethylene	.005	ND
TTHM	100	49.8
Toluene	1	ND
Vinyl Chloride	.002	ND
Xylenes	10	ND
TOC	TT	2.9
Chlorine	4	2.8
Chlorine Dioxide	800	ND

Key to Tables

AL = Action Level
MCL = Maximum Contaminant Level
MCLG = Maximum Contaminant Level Goal
NTU = Nephelometric Turbidity Units
ND = Not Detected
pci/l = picocuries per liter (a measure of radioactivity)
ppm = parts per million, milligrams pr liter (mg/l)
ppb = parts per billion, micrograms per liter (ug/l)
TT = Treatment Technique, a required process intended to reduce the level of a contaminant in drinking water.

Table of Secondary Contaminants

Contaminant	MCL	Unit	Amount Detected
Alkalinity, Total	NA	ppm	81.1
Aluminum	0.20	ppm	<.050
Calcium	NA	ppm	23.7
Carbon Dioxide	NA	ppm	12.4
Chloride	250	ppm	12.6
Color	15.0	Units	< 5.0
Foaming Agents	0.50	ppm	< 0.5
Hardness	NA	ppm	75.2
Iron	0.30	ppm	<.050
Magnesium	NA	ppm	3.92
Manganese	0.05	ppm	< 0.10
Odor	3.0	Threshold Odor Number	1
pH	NA	ppm	7.81
Silver	0.10	ppm	< 0.050
Sodium, as Na	NA	ppm	14.7
Sulfate	500	ppm	11.5
Total Dissolved Solids	500	ppm	116
Zinc	5.0	ppm	<0.050

Featured in this year's report are the Royal Avenue Pool and members of the the North Alabama Swim Association enjoying an early morning practice session in the state-of-the-art 25 yards by 25 meters competion pool. This pool holds 255,000 gallons of sparkling Florence water. The adjacent recreation pool holds 113,000 gallons.

Table of Detected Contaminants

Contaminant	MCLG	MCL	Range	Violation	Amount Detected	Likely Sources of Contaminant(s)
Bacteriological — *01/01/2010 - 12/31/2010*						
Turbidity — *01/11/2010*						
Total Coliform Bacteria	0	<5%		No	1% Present or Absent	Naturally present in the environment
Turbidity	0	TT	0.01 - 0.16	No	0.17 NTU	Soil runoff
Inorganic Chemicals — *01/01/2010 - 12/31/2010*						
Fluoride		4	0.23 - 1.27	No	1.27 ppm	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate	10	10	0.65 - 1.49	No	1.49 ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Organic Chemicals — *01/01/2010 - 12/31/2010*						
Chlorine	0	4	1.1 - 2.8	NO	2.8 ppm	Disinfectant
HAA5	0	60	<1.00 - 34.6	No	34.6 ppm	By-product of drinking water chlorination
TOC	NA	TT	.5 - 2.9	NO	2.9 ppb	Naturally present in the environment
TTHMs	0	80	<1.00 - 49.8	No	49.8 ppm	By-product of drinking water chlorination

Unregulated Contaminants The City of Florence Water Department did not test, nor was it required to test, for Radon during 2010. However, there are other unregulated contaminants that were tested for in 2010 which can be found in this annual report.

Asbestos and Dioxin Based on a study conducted by ADEM with the approval of the EPA, a statewide waiver for the monitoring of asbestos and dioxin was issued. Thus monitoring for these contaminants is not required.

Source Water Assessments The City of Florence Water Department has performed source water assessments for the Wilson Lake Treatment Plant located on the Wilson Lake (Tennessee River) and the Cypress Creek Treatment Plant located on Cypress Creek. In addition, assessments have been completed for Peck Lane and Houston Hill's wells located in the Killen and Center Star areas. This information may be viewed in the Water Department office between the hours of 8:00 am to 5:00 pm, Monday through Friday. Appointments for reviewing are recommended.

Lead 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. The City of Florence Water Department 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 or at http://www.epa.gov/safewater/lead.

Cryptosporidium Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised individuals, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water. We currently monitor for Cryptosporidium and have had none detected.

Required Additional Health Information

To ensure that tap water is safe to drink, EPA prescribes limits on the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water.

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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) 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 radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

(A) Microbiological contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

(B) Inorganic contaminants, such as salts and metals, which can be natural occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

(C) Pesticides and herbicides, which may come from a variety of sources such as agricultural, storm water runoff, and residential uses.

(D) Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.

(E) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than is the general population. Immuno-compromised persons such as persons with cancer under-going 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 are available from the Safe Drinking Water Hotline (800-426-4791).

Table of Unregulated Contaminants

Contaminant	Amount Detected	Contaminant	Amount Detected
1,1 – Dichloropropene	ND	Chloroform	30.6
1,1,1,2-Tetrachloroethane	ND	Chloromethane	ND
1,1,2,2-Tetrachloroethane	ND	Dibromochloromethane	ND
1,1-Dichloroethane	ND	Dibromomethane	ND
1,2,3 – Trichlorobenzene	ND	Dicamba	ND
1,2,3 – Trichloropropane	ND	Dichlorodifluoromethane	ND
1,2,4 – Trimethylbenzene	ND	Dieldrin	ND
1,3 – Dichloropropane	ND	Hexachlorobutadiene	ND
1,3 – Dichloropropene	ND	Isoprpylbenzene	ND
1,3,5 – Trimethylbenzene	ND	M-Dichlorobenzene	ND
2,2 – Dichloropropane	ND	Methomyl	ND
3-Hydroxycarbofuran	ND	MTBE	ND
Aldicarb	ND	Metolachlor	ND
Aldicarb Sulfone	ND	Metribuzin	ND
Aldicarb Sulfoxide	ND	N - Butylbenzene	ND
Aldrin	ND	Naphthalene	ND
Bromobenzene	ND	N-Propylbenzene	ND
Bromochloromethane	ND	O-Chlorotoluene	ND
Bromodichloromethane	4.75	P-Chlorotoluene	ND
Bromoform	ND	P-Isopropyltoluene	ND
Bromomethane	ND	Propachlor	ND
Butachlor	ND	Sec - Butylbenzene	ND
Carbaryl	ND	Tert - Butylbenzene	ND
Chloroethane	ND	Trichlorfluoromethane	ND

National Primary Drinking Water Regulation Compliance

This 2011 Annual Water Quality Report was prepared by Michael Doyle and Regina Hall of the City of Florence Water/Wastewater Department using technical assistance and guidance from the American Water Works Association (AWWA), the National Rural Water Association (NRWA), United States Environmental Protection Agency (USEPA), and the Alabama Department of Environmental Management (ADEM).

We will be pleased to answer any questions about the City of Florence Water Department and our water quality. Call our offices at (256) 760-6490 on Monday through Friday between the hours of 8:00 a.m. and 5:00 p.m. The City of Florence Water/Wastewater Department operates under the authority of the Mayor and Council of the City of Florence, Alabama. The City Council meets at 5:00 p.m. on every 1st and 3rd Tuesday of each month at 110 W. College Street.

Learn more about the City of Florence Water Department water system at...

www.florenceal.org