2007 Water Quality Report Card

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INTRODUCTION

As your water service provider, we have a four-part strategy to make sure you receive a safe, high quality and reliable supply of drinking water:

- ✓ We ***protect our supply*** by preventing the contamination of our source water; acquiring and preserving critical watershed lands; and helping local governments implement and maintain effective controls on development activities in our watersheds.

- ✓ We ***make the water safe*** through high quality water treatment processes that remove potentially harmful contaminants.

- ✓ We ***prove it's safe*** by carefully monitoring the water in our reservoirs and the drinking water we deliver to you and our other customers.

- ✓ We ***promote the wise and sustainable use and management of our water resources*** through conservation requirements during normal as well as water shortage conditions; seasonal and tiered water conservation rates; the planned reclaimed water system (currently under construction); and other strategies.

In 2007, we **provided about 3 billion gallons of drinking water** to the Carrboro-Chapel Hill community in compliance with State and Federal standards for safe drinking water.

Our Laboratory staff **tested our drinking water for more than 100 substances**, but only 11 were present at detectable levels. As shown in this report, all 11 substances were below the allowable limits in the Federal Safe Drinking Water Act (SDWA).

Regular testing shows that **our drinking water is healthy and safe,** but people with weak or developing immune systems may need to take special precautions. (Please see the section titled "For people with special risks of infection..." for more information.)

DEFINITIONS

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. MCLs are set at very stringent levels. A person would have to drink 2 liters (about two quarts) of water at the MCL level every day for a lifetime to have a one-in-a-million chance of having adverse health effects from many regulated contaminants.

Parts per million (ppm) - one part per million corresponds to about one minute in two years, or one penny in $10,000. One ppm is equivalent to 1 milligram per liter (mg/L).

Parts per billion (ppb) - one part per billion corresponds to about one minute in 2,000 years, or one penny in $10 million. One ppb is equivalent to 1 microgram per liter (ug/L).

Nephelometric Turbidity Unit (NTU) - a measure of cloudiness in water. Turbidity over 5 NTU is just barely noticeable to the average person.

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

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

90th Percentile – the contaminant level which 90 percent of the samples for a given water characteristic were below. The 90th percentile level is the required reporting unit for lead and copper.

Below Detectable Level (BDL) - a concentration that is below the level that can be detected with required tests using accepted laboratory methods.

Maximum Residual Disinfection 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 using disinfectants to control microbial contaminants.

Maximum Residual Disinfectant Level (MRDL) - the highest level of a disinfectant allowed in drinking water. Disinfection is necessary to control microbial contaminants in drinking water.

Disinfection by-products - substances such as haloacetic acids and trihalomethanes, which are formed when chlorine or chloramines used to disinfect drinking water react with organic compounds naturally present in the water from our lakes. Federal standards require public water systems to limit the levels of haloacetic acids and trihalomethanes because they could be harmful at high levels.

Disinfection by-product precursors - organic carbon compounds that can combine with disinfectants (chlorine and chloramines) to form haloacetic acids and trihalomethanes as discussed above.

Removal Ratio - measure of the effectiveness of total organic carbon removal during our water treatment process. This ratio should be greater than or equal to 1.0. The Removal Ratio is the Federally required reporting unit for total organic carbon.

University Lake

DRINKING WATER QUALITY: 2007 TEST RESULTS

In 2007, the Laboratory staff of four people at our Jones Ferry Road Water Treatment Plant tested our drinking water more than 54,000 times for more than 100 substances in accord with State and Federal requirements. Listed below are the substances that were detected, all of which were below the regulatory limits. There were no violations of the Federal Safe Drinking Water Act or other related State and Federal standards. (Note: Please see the Definitions section for an explanation of terms.)

Please click here for information on our 2007 water quality testing results.

LEAD AND YOUR HEALTH

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. OWASA 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 running water 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 EPA's Safe Drinking Water Hotline, 800-426-4791, or at http://www.epa.gov/safewater/lead.

TESTING OUR DRINKING WATER FOR LEAD

We fully comply with the Federal and State drinking water standards and with all lead testing and test reporting requirements. The Federal limit on lead in drinking water is a maximum of 15 parts per billion of lead in at least 90% of the samples tested. (One part per billion corresponds to one penny in $10 million.) Our testing results are significantly better than this standard as discussed below.

In some communities with old water systems, lead has dissolved from lead fittings or lead pipes in the network of public water mains. In the OWASA water system, however, all known lead fittings and pipes have been abandoned or removed. Plumbing code limits for lead in solder and fixtures were tightened in 1986. In plumbing systems built before then, lead may dissolve from pipes, solder or fixtures into drinking water.

We regularly monitor our drinking water as it leaves the Jones Ferry Road Water Treatment Plant. For over 10 years, all samples tested for lead have been less than 3 parts per billion. In accord with Federal and State standards, we also test every three years for lead in tap water at 30 homes built between 1983 and 1985. The test results from 2005, the year of our last triennial tests in the older homes, were all below the detectable level of 3 parts per billion.

In response to customers' requests in 2007, we tested tap water for lead in 61 homes and other locations. In 55 samples or 90% of the tests, lead was below the detectable level of 3 ppb. In the remaining 6 tests, lead levels were between 4 and 6 ppb, well below the Federal Safe Drinking Water Act standard or "Action Level" of 15 ppb.

In the spring and summer of 2007, we tested water in 21 buildings constructed in the previous two years because of concerns about lead contamination that may occur in new plumbing systems before a corrosion-inhibiting coating develops in pipes and fixtures. The test results are included in the summary mentioned in the previous paragraph. The coating develops in plumbing systems because OWASA adds chemicals called phosphates to drinking water during the treatment process.

We also engaged Dr. Marc Edwards of Virginia Tech to evaluate potential changes in OWASA's water treatment process to further reduce the potential for lead contamination. As a result, we reduced the pH of our water and increased the amount of phosphate that we add in the treatment process.

To get more information, including how you can have the water in your home tested for lead at no charge, please call the OWASA Laboratory staff at 537-4227 or send an e-mail to rmonschein@owasa.org.

TESTING OUR LAKE WATER FOR PHARMACEUTICAL COMPOUNDS

From 2002 to 2005, the U.S. Geological Survey (USGS) tested water from eight public water supplies in the Triangle region, including our Cane Creek Reservoir and University Lake, for 126 organic chemicals (pharmaceuticals, antibiotics, personal care product compounds, fire retardants, plasticizers and pesticides). These substances, sometimes called emerging contaminants, endocrine disrupting compounds (EDCs), or pharmaceutical and personal care products (PPCPs), are of interest because they are present in water in very small concentrations, but little is known about their effects on human health. These contaminants have been under study by a variety of researchers nationally.

Trace amounts (generally less than 0.5 parts per billion) of at least one chemical were detected at all sampling locations in the USGS study of Triangle streams and reservoirs. While no samples exceeded Federal or State water quality standards, such standards exist for only a few of the chemicals in the study. Concentrations were generally within the ranges observed in other USGS studies across the nation. The compounds found in our lakes included the non-prescription pain killer acetaminophen, two fire retardants found shortly after a fire in the spring of 2004 in the University Lake watershed, an herbicide and an anti-microbial disinfectant. Other than a fire retardant detected at 3.7 parts per billion, concentrations were less than one part per billion.

The USGS released a technical report on the study of Triangle Area water supplies. A summary of the report can be viewed at http://pubs.usgs.gov/sir/2007/5054 and the full report is available at http://pubs.usgs.gov/sir/2007/5054/pdf/SIR2007-5054.pdf. If you do not have Internet access, please contact us at 968-4421 and we will be glad to mail you a paper copy of the report.

ARSENIC TESTING: In February and October of 2007, we tested for arsenic in our drinking water. Arsenic was below the detectable level of 5 parts per billion.

MTBE TESTING: In March of 2007, we tested our drinking water for a substance called MTBE, which was formerly used as a gasoline additive. MTBE was below the detectable level of 0.5 parts per billion.

DRINKING WATER QUALITY—BASIC INFORMATION

All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily pose a health risk. The U.S. Environmental Protection Agency (EPA) limits the amount of certain contaminants in water from public drinking water systems. The Food and Drug Administration sets limits for contaminants in bottled water to protect public health.

ADDITIONAL CHARACTERISTICS OF OUR DRINKING WATER

- **DISINFECTION WITH CHLORAMINES.** We disinfect our water with chloramines, a compound of chlorine and ammonia, in all months except March, when we instead use chlorine in accord with State requirements. (Chlorine disinfection and related flushing of the water system were not done in March, 2007 due to drought conditions.) Chloramines and chlorine are toxic to fish and amphibians, such as frogs. If you have fish in an aquarium filled with OWASA water, please contact a pet supply store for advice on how to neutralize chloramines and chlorine to protect your fish.

- **OUR DRINKING WATER IS VERY SOFT.** It has a low mineral content (dissolved calcium, etc.) of about 2 grains per gallon of water. This means that a small amount of soap is needed for washing dishes, clothes, etc.

- **OUR WATER IS SLIGHTLY ALKALINE.** On the scale of acidity to alkalinity, our water normally has a pH of about 8 on a scale of 1 to 14, with 7 being neutral. Controlling pH helps the water treatment process work more effectively and helps prevent corrosion in public water mains and in pipes, fixtures and appliances in private plumbing systems.

- **SOMETIMES OUR WATER LOOKS RUSTY, MILKY OR BUBBLY** because our repairs or other work may stir up iron or other minerals that have accumulated in a water main, if air may enters water lines during a repair, and when fire hydrants are flushed or used for firefighting. Running cold water in a bathtub for 5 to 10 minutes usually clears up the discoloration or bubbles. If the water does not clear up, please contact us at 968-4421. The water should be clear before washing clothes, etc.

FOR PEOPLE WITH SPECIAL RISKS OF INFECTION...

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as people with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people and infants may be particularly at risk for infection.

These people should seek advice from their health care providers about drinking water. Guidelines from the U.S. EPA and Centers for Disease Control and Prevention (CDC) on appropriate means to lessen the risk of infection by Cryptosporidium (please see additional information below about Cryptosporidium) and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

To assist people with infection risks, OWASA offers water treated with extra filtration, reverse osmosis and final disinfection with ultraviolet light. This water is available from an outdoor water vending machine on the west side of our Administration Building at 400 Jones Ferry Road, Carrboro. The cost is 40 cents per gallon. The water vending machine can fill a container of up to 5 gallons. (Customers would need to bring their own containers for this water.)

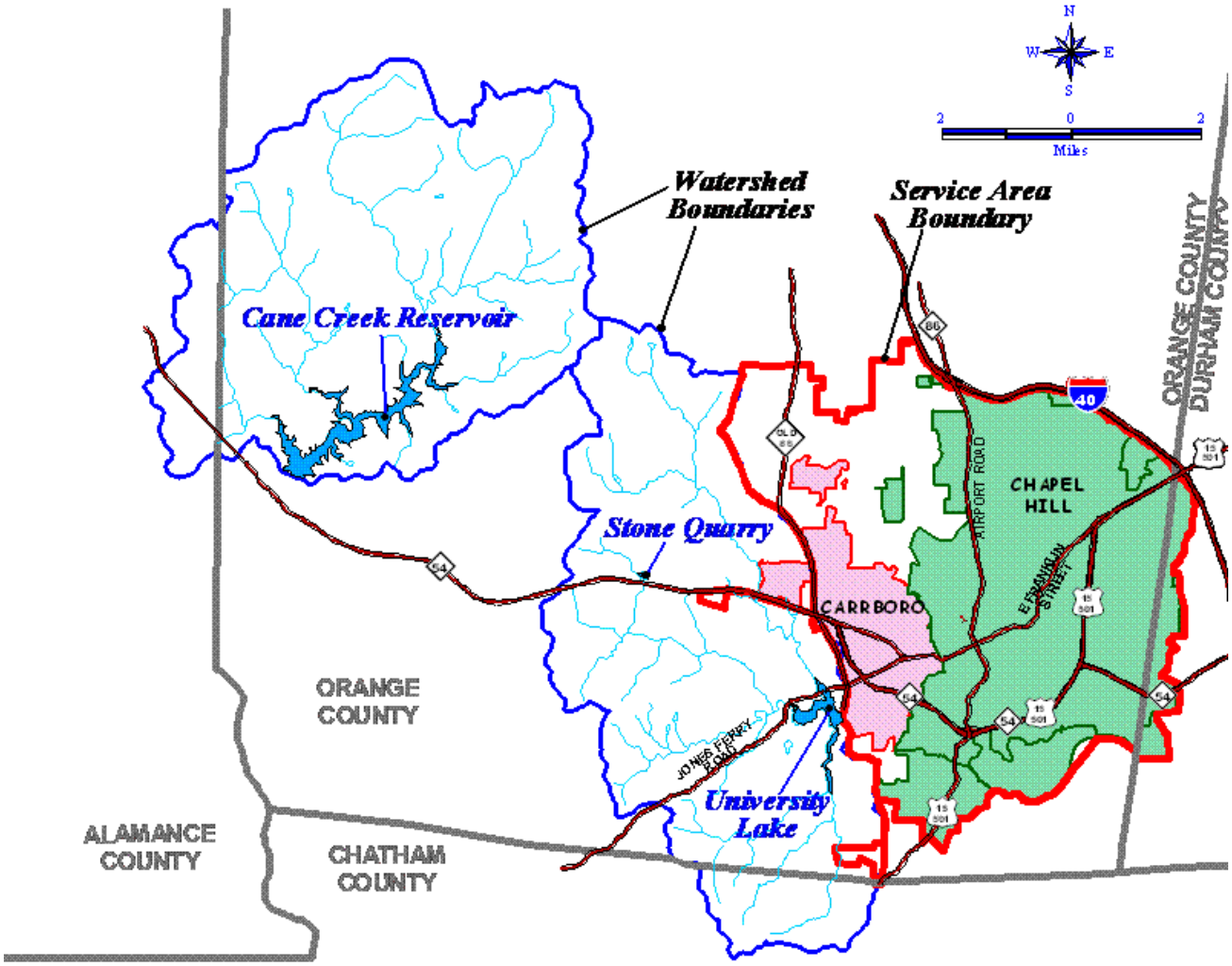
WHAT IS CRYPTOSPORIDIUM?

Cryptosporidium is a microscopic organism that can cause diarrhea, fever and other gastrointestinal symptoms. We have tested for Cryptosporidium in our reservoirs and treated water and have never detected it in our treated water or lake water.

Cryptosporidium comes from human and animal wastes and may occur in local streams and lakes. We control Cryptosporidium through a combination of source water protection and treatment technology.

Please contact us at 537-4227 if you would like to receive more information about Cryptosporidium.

WHERE DOES OUR WATER COME FROM?



The Carrboro-Chapel Hill community uses water from three surface water reservoirs:

- University Lake, which can hold about 450 million gallons;
- The Cane Creek Reservoir, with a capacity of about 3 billion gallons; and
- The Stone Quarry Reservoir, which can store about 200 million gallons.

The Cane Creek Reservoir

Water from the Cane Creek Reservoir and University Lake is pumped to the Jones Ferry Road Water Treatment Plant in Carrboro. Water from the Stone Quarry Reservoir can be pumped to University Lake via Phil's Creek or to our water treatment plant. In addition to these sources, OWASA has water line connections with the City of Durham, the Town of Hillsborough and Chatham County. By the year 2030, an expanded stone quarry about two miles west of Carrboro will become available to OWASA with an estimated capacity of 2.4 billion gallons.

OWASA has an allocation of Jordan Lake capacity that would provide about 5 million gallons of water per day if needed. OWASA began discussions in the spring of 2008 with the City of Durham, Chatham County and Orange County to evaluate the costs and benefits of potential shared access to Jordan Lake water compared to alternatives such as greater water conservation, expanded use of reclaimed water, etc. However, our policy is to maximize the use of water from our existing, high quality water sources, which are protected with locally-adopted restrictions on development in our lakes' watersheds.

WHERE DO CONTAMINANTS COME FROM?

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells.

As water travels over the surface of land or through the ground, the water dissolves naturally-occurring minerals and, in some cases, radioactive material. Water can also pick up substances resulting from the presence of animals or human activity. Contaminants that may be present in water before it is treated include:

- Microbial contaminants such as viruses and bacteria, which may come from wastewater treatment plants, septic systems, pets, agricultural livestock operations and wildlife.

- Inorganic contaminants such as salts and metals, which may be naturally present in water or may result from 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, stormwater runoff 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 and stormwater runoff from paved and other impervious surfaces.

- Radioactive contaminants, which may be naturally-occurring or result from oil and gas production and mining activities.

N.C. SOURCE WATER ASSESSMENT PROGRAM RESULTS

The N.C. Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) has conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source to potential contaminant sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a susceptibility rating of Higher, Moderate or Lower.

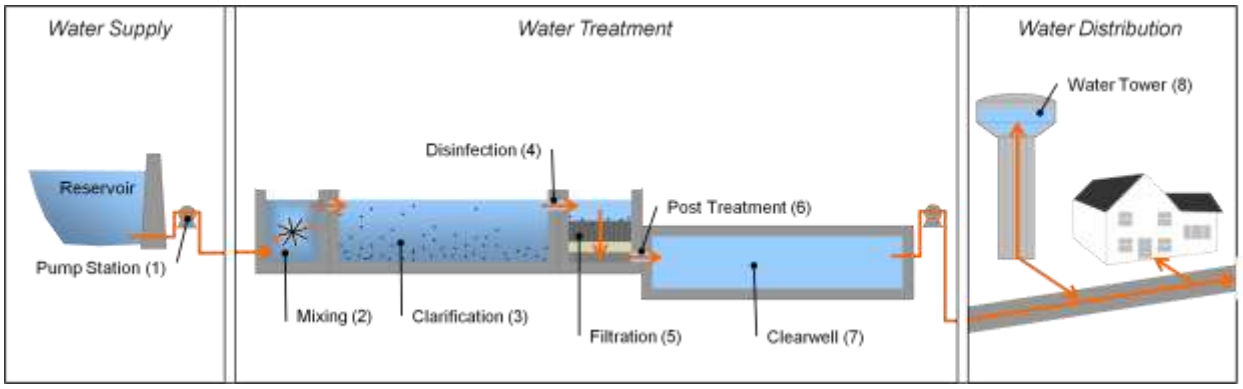
The susceptibility rating of each water source for OWASA was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions in the watershed and its delineated assessment area). The assessment findings are summarized in the table below:

Susceptibility of OWASA's Water Sources to Potential Contaminant Sources

Water Source	Susceptibility Rating
Cane Creek Reservoir	Moderate
University Lake	Moderate

The complete SWAP Assessment report for OWASA may be viewed on the Web at http://www.deh.enr.state.nc.us/pws/swap. To get a printed copy of this report, please mail a request to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh NC 27699-1634, or e-mail your request to swap@ncmail.net. Please indicate your water system name (OWASA), OWASA's public water supply number (03-68-010), and provide your name, mailing address and phone number. If you have any questions about the SWAP report, please contact the NC Source Water Assessment staff at 919-715-2633.

WATER TREATMENT SYSTEM



(1) Raw water from University Lake or the Cane Creek Reservoir is pumped to our Jones Ferry Road Water Treatment Plant.

(2) The water enters our plant through the “headworks” facility, where powdered carbon and alum are added to make solid particles clump together and to improve the taste and odor of the water.

(3) Water then flows to either a “pulsator” or sedimentation basins, where solids settle out of the water.

(4) As water flows to filters, chlorine (bleach) is added for initial disinfection.

(5) Water flows down through filters with layers of sand and anthracite coal, where additional particles are removed from the water.

(6) We add fluoride for dental health, and a chemical to set the pH (acidity/alkalinity) at the right level.

(7) The water flows to our 1.5 million gallon “clearwell” tank for temporary storage. Ammonia is added to the water and the ammonia combines with chlorine to form “chloramines” to further disinfect the water. (Please see the part of this report on “Additional Characteristics of our Water” for important information about chloramines and fish.) Water is then pumped to our elevated water storage tanks.

(8) The elevated tanks maintain water pressure so that treated drinking water can be delivered to your tap through our 400+ miles of public water mains. The tanks also ensure that sufficient water is available to fight fires and meet peak demand.

We can’t make it rain. WE CAN CONSERVE.

For information on water supply and demand and current conservation requirements, please contact us at 968-4421 or webmaster@owasa.org or visit our website, www.owasa.org.

HOW YOU CAN GET INVOLVED IN WATER QUALITY AND WATER SUPPLY ISSUES

You can get involved in water resource issues at the local, State and national levels in several ways.

- Becoming informed is the first step in being an effective participant.

- You can learn about water and water resource issues from news media; books in the library; Websites such as those of the U.S. Environmental Protection Agency, American Water Works Association and other organizations; and by contacting OWASA (telephone: 968-4421; Website: www.owasa.org; e-mail: webmaster@owasa.org).

- Expressing your views at public meetings, by contacting public officials, etc. is important when improvements, plans, policies and standards affecting water quality and watershed protection are needed or proposed.

We invite you to attend and participate in meetings of the OWASA Board of Directors, which makes decisions on plans and policies and adopts the annual budget for our water and wastewater services. The OWASA Board meets at 7:00 PM on second Thursdays of most months in the Community Room on the lower floor of the OWASA Administration Building, 400 Jones Ferry Road, Carrboro; and on fourth Thursdays at the Chapel Hill Town Hall. On fourth Thursdays, OWASA Board meetings are televised live on channel 18 of the cable television systems serving Chapel Hill and Carrboro.

FOR MORE INFORMATION

If you have any questions about OWASA's drinking water services, please contact our Water Treatment Plant Laboratory Supervisor at (919) 537-4227; or our Water Supply and Treatment Manager at (919) 537-4232. We appreciate the opportunity to respond to any questions you may have and we welcome your feedback about your drinking water, or any other services you receive from OWASA.

Here's how you can contact us:

Orange Water and Sewer Authority
Public Water Supply No.: 03-68-010
400 Jones Ferry Rd., Carrboro, NC 27510
Telephone: (919) 968-4421 Fax: (919) 968-4464
E-mail: webmaster@owasa.org Website: www.owasa.org

OWASA is the community-owned, public non-profit, water and sewer agency serving the Carrboro-Chapel Hill community.

EPA's Safe Drinking Water Hotline: (800) 426-4791

This report on the quality of our drinking water in 2007 was distributed in the spring of 2008.