

## Physical & Mineral Characteristics For Calendar Year 2005

| Constituent             | Annual Range Detected | Annual Average |
|-------------------------|-----------------------|----------------|
| Alkalinity, ppm         | 16.87 - 32.8          | 21.43          |
| Aluminum, ppm           | 0.010 - 0.038         | 0.019          |
| Calcium, ppm            | 2.5 - 9.33            | 4.7            |
| Carbon Dioxide ppm      | 2.0 - 7.0             | 4.0            |
| Chloride, ppm           | 1.91 - 12.35          | 7.61           |
| Chlorine, ppm           | 0.10 - 1.95           | 1.01           |
| Conductivity            | 86.6 - 130.4          | 105.94         |
| Hardness, ppm           | 11.0 - 38.0           | 23.0           |
| Manganese, ppb          | ND - 0.008            | 0.004          |
| Magnesium, ppm          | 1.20 - 2.62           | 1.63           |
| Phosphorus, ppm         | 0.34 - 1.32           | 0.73           |
| Potassium, ppm          | 0.92 - 2.58           | 1.77           |
| Silica, ppm             | 10.4 - 15.6           | 12.76          |
| Sodium, ppm             | 5.14 - 12.5           | 8.24           |
| Avg Temperature, deg. C | 5.7 - 27.7            | 16.9           |
| Zinc, ppm               | 0.101 - 0.541         | 0.323          |
| pH, standard units      | 7.08 - 7.55           | 7.34           |

### Cryptosporidium sp.

Cryptosporidium sp. is a microscopic organism that, when ingested, can cause diarrhea, fever and other gastrointestinal symptoms. The organism occurs naturally in surface waters (lakes & streams) and comes from animal waste. Cryptosporidium sp. is eliminated by an effective treatment combination of coagulation, sedimentation, filtration, and disinfection. Both of the city's water sources were tested monthly for Cryptosporidium sp. from 1994-1998, but it was not detected. Cryptosporidium sp. has never been detected in our treated drinking water.

### Special Concerns

Some people may be more vulnerable to contaminants in drinking water than the general population. People whose immune systems have been compromised -- such as people with cancer undergoing 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. Environmental Protection Agency and Centers for Disease Control guidelines on appropriate means to lessen risk of infection by Cryptosporidium sp. and other microbiological contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

## Protecting Our Water Sources

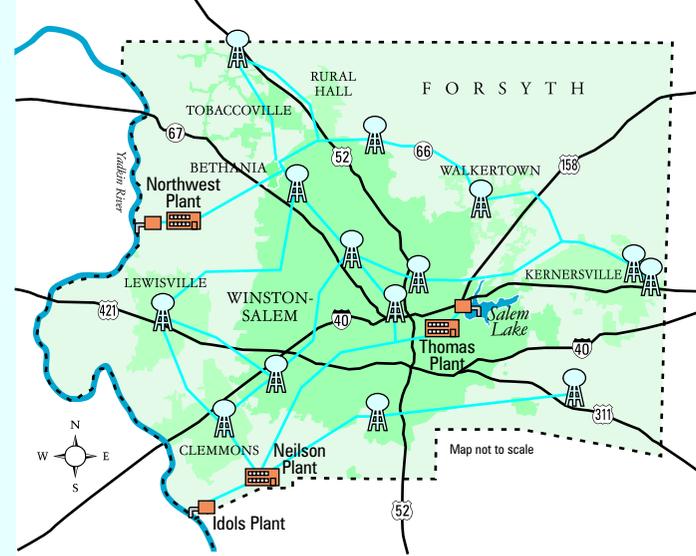
Sources of drinking water (both tap and bottled) include rivers, lakes, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

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 storm water runoff, industrial or wastewater discharges, oil and gas productions, mining or farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban storm water 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 come from gas stations, urban storm water runoff, and septic systems.
- **Radioactive contaminants** which can be naturally occurring or the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, the Environmental Protection Agency limits the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

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



The water system for Winston-Salem and Forsyth County serves more than 300,000 people with an average daily demand of approximately 43.2 million gallons.

### EN ESPAÑOL

Si desea recibir una copia de este reporte en Español o si tiene preguntas con respecto a la calidad del agua que consume, por favor comuníquese con el departamento de los servicios públicos durante las horas de trabajo, el teléfono es 727-8418.

The Winston-Salem/Forsyth County water system is operated by the City/County Utility Commission. The commission meets monthly the second Monday of each month at 2 p.m. in City Hall South, Room 530, 100 E. First Street, Winston-Salem, N.C. For questions about this report or the quality of our drinking water, call Utilities Administration at 336 727-8418.

Produced by the  
Winston-Salem/Forsyth County Utility Commission  
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336 727-8418

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# 2005 Water Quality Report

The Yadkin River supplies 70 per cent of Forsyth County's fresh water.

## Winston-Salem/Forsyth County Utility Commission drinking water exceeds all water quality standards

The Winston-Salem/Forsyth County Utility Commission operates three water treatment facilities drawing water from both the Yadkin River and Salem Lake. Together, these water treatment facilities can produce 97 million gallons per day of drinking water. The Neilson and Northwest Water Plants can treat 48 and 25 million gallons per day, respectively, from the Yadkin River. The Thomas Water Plant can treat 24 million gallons per day from either the Yadkin River or Salem Lake.

For 2005, as in previous years, these treatment facilities have met or exceeded all state and federal (EPA) standards for drinking water quality. This accomplishment reflects the quality and dedication of the employees who work year-round to provide adequate supplies of safe drinking water.

This brochure includes details about where your drinking water comes from, how it is treated, what it contains, and exactly how it compares to state and federal standards. The Utility Commission is providing this information to you because it is committed to delivering a quality product for its customers. This report is updated on a regular basis and mailed annually to our customers.

The raw water basin at the  
Northwest Water Treatment Plant

Winston-Salem • Forsyth County  
**City/County Utilities**  
Water • Sewer • Solid Waste Disposal

# Water-wise Dos & Don'ts

## In the kitchen

- Do use a bowl to clean fruits & vegetables instead of washing them under running water. Faucets use 2-3 gallons of water a minute. Use the leftover water on your house plants.
- Do store drinking water in the refrigerator instead of running the tap to get cool water.
- Don't leave the water running when you wash dishes by hand.
- Do run the dishwasher only when it is full. Dishwashers use 8-12 gallons per load.
- Do fix a leaking faucet. A leak at the rate of one drop a second wastes 2,700 gallons a year. A constant drip can go through as much as 100 gallons a day!
- Don't defrost food under running water.
- Don't rinse plates before putting them in the dishwasher. Scrape them and let the machine do the rest.

## In the bathroom

- Do fill the bathtub only halfway and save 10-15 gallons. And stop up the tub before turning on the water. The initial cold water will be warmed by hot water that flows in later.
- Do take shorter showers and save 5-10 gallons per minute.
- Do install water-saving showerheads that provide a vigorous spray while reducing water flow to 3-5 gallons per minute.
- Don't leave the water running while you brush your teeth or shave. Faucets use 2-3 gallons a minute.
- Do fill a plastic laundry or soap bottle and place it in the toilet tank. (Don't use bricks; they crumble and can cause plumbing problems!)
- Do check your toilet for leaks: Put a small amount of food coloring in the tank and wait 30 minutes. If the water in the bowl is colored, replace the flapper inside the toilet tank. (Flush immediately after the test so the food coloring does not stain the bowl.)

## In the laundry

- Do run your washing machine only when you have a full load. Washing machines use up to 50 gallons per cycle.

## Outdoors

- Don't wash your car at home, take it to a commercial car wash that recycles water.
- Do use a drip hose to water your flowers and vegetables.
- Don't water gardens or lawns in the heat of the day, when up to 90 percent of the water is lost through evaporation.
- Do replace leaky hoses that waste water where it is not needed.
- Don't use a hose to clean sidewalks and driveways.
- Do mulch your flower and garden beds to reduce evaporation and weeds.
- Do adjust your sprinklers so they don't water the sidewalk and driveway.

The Utility Commission regularly monitors the water supply for over 112 contaminants. In recent years the number of contaminants that water utilities must monitor has grown significantly. Sampling requirements are often complicated and vary from existing facilities to new facilities. Since the start-up of the Northwest Plant in July 2004, the commission has monitored for nitrates each month at this entry point. All of the historical data from our existing facilities (which share the same source water as the Northwest WTP) and all of samples at the Northwest Plant each month show that nitrate levels are well below the regulatory limit of 10.0 mg/L. In fact, none of our data indicates the levels of nitrates in the drinking water produced at the Northwest Plant ever exceeded one-tenth of the regulatory limit. However, the state will not consider our data for the first quarter of 2005 due to the certification status of our laboratory (see attached Treated Water Quality Table.) On Dec. 1, 2005, we were notified by the state that we were out of compliance with regards to this requirement. Therefore, we are required to provide you with the following statement:

The Utility Commission is required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the compliance period(s) specified in the table below, we did not monitor or did not complete all monitoring or testing for the contaminants group(s) listed and therefore cannot be sure of the quality of our drinking water during that time.

|   |   |
|---|---|
| CONTAMINANT GROUP**:                    | (NT) NITRATES                                 |
| Entry Point/Location Code:              | Northwest WTP/EP3                             |
| Compliance Period Begin Date:           | January 1, 2005                               |
| Sampling Frequency:                     | Quarterly                                     |
| When Water System to Complete Sampling: | Year's Quarterly Sampling Completed Feb. 2006 |

\*\* (NT) NITRATE/ (NI) NITRITE - includes testing for nitrate and/or nitrite

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

**What should I do?** There is nothing you need to do at this time, as there is no danger to public health.

For more information, please contact: Bill Brewer, Northwest Water Treatment Plant, 2800 River Ridge Road, Pfafftown, NC 27040. 336-945-1179

## Treated Water Quality

The following substances were detected in the Winston-Salem/Forsyth County public water supply during the 2005 calendar year.

### Regulated at the Treatment Plant

| Substance                   | Highest Level Allowed (EPA's MCL <sup>1</sup> ) | Ideal Goals (EPA's MCLG <sup>2</sup> ) | Range of Detection | Average Level Detected | Source   |
|-----------------------------|---|--|--------------------|------------------------|--|
| Barium, ppm <sup>3</sup>    | 2.0   | 2.0                                    | 0.011-0.019        | 0.014                  | Natural geology; drilling operations; metal refinery wastes. |
| Fluoride, ppm               | 4.0 <sup>4</sup>                                | 4.0                                    | 0.56 - 1.26        | 0.88                   | Industrial waste byproduct by PVC manufacturers              |
| Nitrate, ppm                | 10.0  | 10.0                                   | 0.19 - 0.74        | 0.57                   | Nat. geology; battery manufacturing & metal refinery wastes  |
| Total Organic Carbon        | Treatment Technique <sup>5</sup>                | n/a                                    | 0.8 - 1.9          | 1.02                   | Nat. geology; water treatment additive                       |
| Turbidity, NTU <sup>6</sup> | Treatment Technique <sup>7</sup>                | n/a                                    | 0.020 - 0.210      | 0.051                  | Soil erosion; natural geology                                |

### Regulated in the Distribution System

|   |                       |     |             |          |  |
|---|-----------------------|-----|-------------|----------|--|
| Total Trihalomethanes, ppb <sup>8</sup> | 80 RAA <sup>9</sup>   | 0.0 | 9.0 - 77.0  | 36.4 RAA | Byproducts of drinking water disinfection. |
| Total Haloacetic Acids, ppb             | 60 RAA                | 0.0 | 14.2 - 43.1 | 28.7 RAA | Byproducts of drinking water disinfection. |
| Total Coliform                          | Less than 5% positive | 0.0 | n/a         | 0.0      | Natural geology.                           |
| Alpha Emitters, pCi/L <sup>10</sup>     | 15                    | 0.0 | 0.0         | 0.0      | Natural geology                            |
| Beta Emitters, pCi/L                    | 50                    | 0.0 | 0.0         | 0.0      | Natural geology and man-made sources       |

### Unregulated Substances

|                            |               |               |                        |      |                                  |
|----------------------------|---------------|---------------|------------------------|------|----------------------------------|
| Bromodichloromethane, ppb  | Not Regulated | Not Regulated | 1.0 - 10.0             | 5.6  | Component of the trihalomethanes |
| Chlorodibromomethane, ppb  | Not Regulated | Not Regulated | ND <sup>11</sup> - 1.0 | 0.10 | Component of the trihalomethanes |
| Chloroform, ppb            | Not Regulated | Not Regulated | 7.0 - 66.0             | 27.0 | Component of the trihalomethanes |
| Monochloroacetic Acid, ppb | Not Regulated | Not Regulated | ND - 5.5               | 0.6  | Component of Haloacetic acids    |
| Dichloroacetic Acid, ppb   | Not Regulated | Not Regulated | 5.2 - 26.6             | 15.6 | Component of Haloacetic acids    |
| Trichloroacetic Acid, ppb  | Not Regulated | Not Regulated | 4.6 - 17.1             | 11.4 | Component of Haloacetic acids    |
| Sulfate, ppm               | 500 proposed  | Not Regulated | 7.31 - 16.00           | 10.6 | Natural geology                  |

### Regulated at the Consumers' Tap

| Substance   | Highest Level Allowed (EPA's MCL)  | Ideal Goals (EPA's MCLG) | Number of Sites Sampled | Number of Sites Above the Action Level | 90th Percentile Concentration, ppb | Source (both lead and copper)                                 |
|-------------|------------------------------------|--------------------------|-------------------------|--|------------------------------------|---|
| Lead, ppb   | 15.0 (action level <sup>12</sup> ) | 0.0                      | 73                      | 4                                      | 4.0                                | Corrosion of household plumbing; erosion of natural deposits. |
| Copper, ppm | 1.3 (action level)                 | 1.3                      | 73                      | 0                                      | 0.1                                |   |

Definitions:

<sup>1</sup> **Maximum Contaminant Level (MCL)** - The highest level of a contaminant that is allowed in drinking water.

<sup>2</sup> **Maximum Contaminant Level Goal (MCLG)** - The level of a contaminant in drinking water below which there is no known or expected risk to health.

<sup>3</sup> **ppm** - One part per million. (For example, one penny in \$10,000.)

<sup>4</sup> The EPA's maximum contaminant level for fluoride is 4.0 mg/L, however the State of North Carolina has established a maximum contaminant level of 2.0 mg/L.

<sup>5</sup> **Treatment technique** - Treatment technique for total organic carbon was complied with throughout 2004.

<sup>6</sup> **NTU** - nephelometric turbidity unit, a measure of the cloudiness of water.

<sup>7</sup> **Treatment technique** - No more than 5% of measurements in a given month may exceed 0.3 NTU.

<sup>8</sup> **ppb** - One part per billion. (For example, one penny in \$10,000,000.)

<sup>9</sup> **Running annual average** - last four quarterly samples collected from the system.

<sup>10</sup> **pCi/L** - Picocuries per liter is a measure of the radioactivity in water. A picocurie is 10<sup>-12</sup> curies and is the quantity of radioactive material producing 2.22 nuclear transformations per minute.

<sup>11</sup> **ND** - Not detected.

<sup>12</sup> **Action Level** - The concentration of a contaminant that triggers treatment or other requirement that a water system must follow. Action levels are reported at the 90th percentile for homes at greatest risk.

Copies of these results can be obtained by calling the City/County Utilities Water Quality Line at 336-946-2524.