Physical & Mineral Characteristics
For Calendar Year 2006

Constituent	Annual Range Detected	Annual Average
Alkalinity, ppm	18 - 31	23
Aluminum, ppm	0.008 - 0.041	0.017
Calcium, ppm	2.37 - 8.31	4.35
Carbon Dioxide ppm	1.0 - 10.0	4.0
Chloride, ppm	5.12 - 16.83	10.06
Chlorine, ppm	1.16 - 2.04	1.43
Conductivity, micromhos/cm	78.7 - 147.6	111.79
Hardness, ppm	11.0 - 38.0	22
Magnesium, ppm	1.20 - 2.16	1.56
Manganese, ppb	ND - 0.076	0.007
pH, standard units	7.23 - 7.67	7.38
Phosphorus, ppm	0.087 - 0.730	0.425
Potassium, ppm	1.36 - 2.98	1.99
Silicon, ppm	1.89 - 6.26	4.73
Sodium, ppm	5.85 - 17.64	9.87
Temperature, Deg. C	6.8 - 28.2	17.4
Zinc, ppm	0.065 - 0.444	0.234

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 are currently being tested monthly for Cryptosporidium sp. and to date it has not been 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.

Watering Your Lawn

Wise watering practices not only conserve water but help to build a stronger, healthier lawn. Constant over-watering or frequent under-watering promotes shallow roots, which is a sure way to damage your lawn during times of stress. These stressful times for your lawn include not only the hot summer months, but also the cold winter months when there is really nothing you can do for an unhealthy lawn. The healthiest lawns have the healthiest roots. The best watering practices moisten the soil 4-6 inches deep; this is the extent of the root zone, and requires only about 1 inch of water.

When to water your lawn: Water your lawn at the first signs of moisture stress. The easiest way to tell if moisture stress is present is to look for footprints on your lawn. When you can see footprints on your lawn (meaning your lawn doesn't spring back up after you have walked across it) water your lawn. Do not water again until you see footprints again. Water when the sun will cause the least evaporation. Watering in the early morning is best. The next best practice is to water in the evening, but do it early enough so the grass is not wet overnight, which could enhance fungal growth. Other signs include: a bluish gray color, wilted, folded, or curled leaves.

How much water do I need to moisten the soil 4-6 inches deep? One inch for clay soils. A half-inch for sandy soils.

How do I know when I've put out 1 inch of water? This is easy! Put a few old cans out on the lawn next time you water. When they fill up 1 inch - you're done. Check how long that took. Next time you water just turn on the sprinklers for that amount of time.

Water conservation saves you money!

Leaks
Fix leaky plumbing. A slow drip can waste 15 to 20 gallons a day. A 1/16-inch faucet leak wastes 100 gallons a day!

In the kitchen
Dishwashers use 12 gallons every time they run. Make sure yours is full before you run it. And don't leave the faucet running while you prepare food or wash dishes.

Doing laundry
Many washing machines use up to 40 gallons per load. Save up for full load, or adjust your washing machine for a smaller load if you can.

Outdoors
Use a bucket when washing your car and run the hose only for rinsing. Never hose off sidewalks and driveways. Use a broom instead.

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 comuniquese con el departamento de 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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Winston-Salem, N.C. 27102l
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2006 Water Quality Report

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

The Utility Commission operates the state's oldest water system, which replaced a pump in Salem Square in 1778.

Salem Lake supplies 20 percent 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 2006, 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 to its customers. This report is updated on a regular basis and mailed annually to our customers.

Treated Water Quality

The following substances were detected in the Winston-Salem/Forsyth County public water supply during the 2006 calendar year.*

Regulated at the Treatment Plant

Substance	Highest Level Allowed (EPA's MCL[1])	Ideal Goals (EPA's MCLG[2])	Range of Detection	Average Level Detected	Source
Barium, ppb[3]	2000	2000	10.0 - 26.0	16.0	Natural geology; drilling operations; metal refinery wastes.
Fluoride, ppm[4]	4.0[5]	4.0	0.404 - 1.14	0.66	Industrial waste byproduct by PVC manufacturers
Nitrate, ppm	10.0	10.0	0.09 - 0.93	0.58	Nat. geology; battery manufacturing & metal refinery wastes
Total Organic Carbon	Treatment Technique6[6]	n/a	0.7 - 2.0	1.17	Nat. geology; water treatment additive
Turbidity, NTU[7]	Treatment Technique8[8]	n/a	0.01 - 0.22	0.07	Soil erosion; natural geology

Regulated in the Distribution System

Total Trihalomethanes, ppb	80 RAA[9]	0.0	13 - 111	46.6 RAA	Byproducts of drinking water disinfection.
Total Haloacetic Acids, ppb	60 RAA	0.0	8.7 - 60.7	35.6 RAA	Byproducts of drinking water disinfection.
Chlorine, ppm	4.0	4.0	0.02 - 2.19	1.0	
Alpha Emitters, pCi/L[10]	15	0.0	0.0	0.0	Natural geology.
Beta Emitters, pCi/L	50	0.0	0.0	0.0	Natural geology
Total Coliforms	Less than 5% positive	0.0	n/a	0.0	Natural geology and man-made sources

Unregulated Substances

Bromodichloromethane, ppb	Not Regulated	Not Regulated	3.0 - 17.0	8.8	Component of the trihalomethanes
Chlorodibromomethane, ppb	Not Regulated	Not Regulated	ND[11] - 2.0	ND	Component of the trihalomethanes
Chloroform, ppb	Not Regulated	Not Regulated	10.0 - 94.0	49.4	Component of the trihalomethanes
Monochloroacetic Acid, ppb	Not Regulated	Not Regulated	ND - 4.4	1.0	Component of Haloacetic acids
Dichloroacetic Acid, ppb	Not Regulated	Not Regulated	2.1 - 31.6	19.7	Component of Haloacetic acids
Trichloroacetic Acid, ppb	Not Regulated	Not Regulated	1.3 - 25.9	15.5	Component of Haloacetic acids
Dibromoacetic Acid, ppb	Not Regulated	Not Regulated	ND - 1.6	1.1	
Sulfate, ppm	500 proposed	Not Regulated	7.96 - 18.44	13.2	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[12])	0.0	58	2	4	Corrosion of household plumbing;
Copper, ppb	1,300.0 (action level)	1,300.0	58	0	66	Erosion of natural deposits.

Definitions:

[1] **Maximum Contaminant Level (MCL)** - The highest level of a contaminant that is allowed in drinking water.

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

[3] **ppb** - One part per billion.
(For example, one penny in $10,000,000.)

[4] **ppm** - One part per million.
(For example, one penny in $10,000.)

[5] 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.

[6] **Treatment technique** - Treatment technique for total organic carbon was complied with throughout 2004.

[7] **NTU** - nephelometric turbidity unit, a measure of the cloudiness of water.

[8] **Treatment technique** - No more than 5% of measurements in a given month may exceed 0.3 NTU.

[9] **Running annual average** - last four quarterly samples collected from the system.

[10] **PCi/L** - Picocuries per liter is a measure of the radioactivity in water. A picocurie is 10^{-12} curies and is the quantity of radioactive material producing 2.22 nuclear transformations per minute.

[11] **ND** - Not detected.

[12] **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.

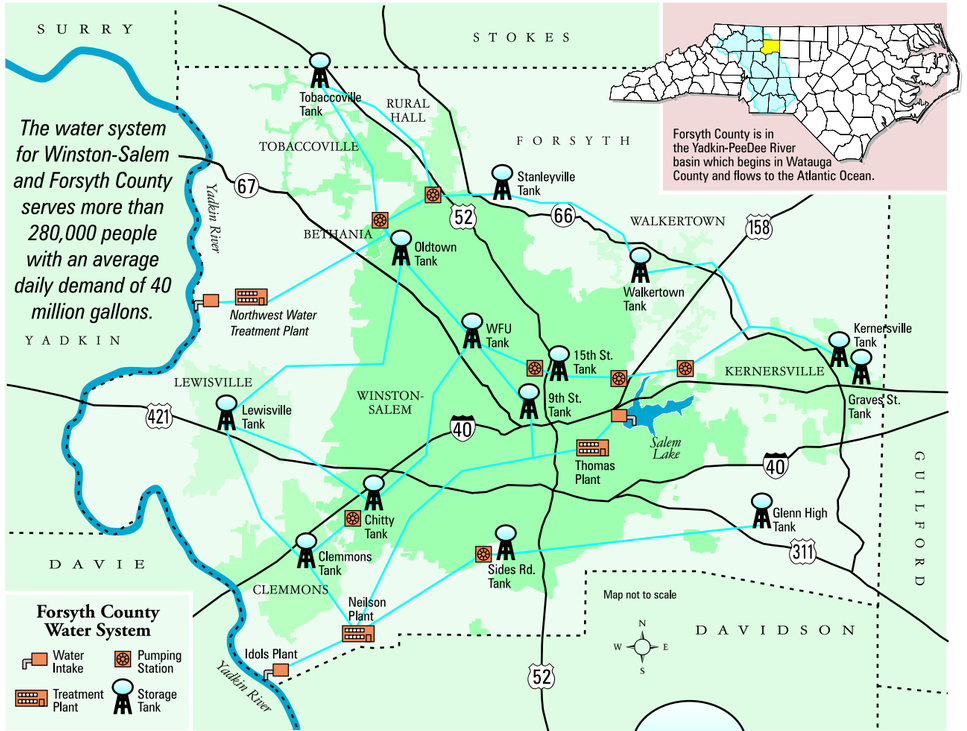
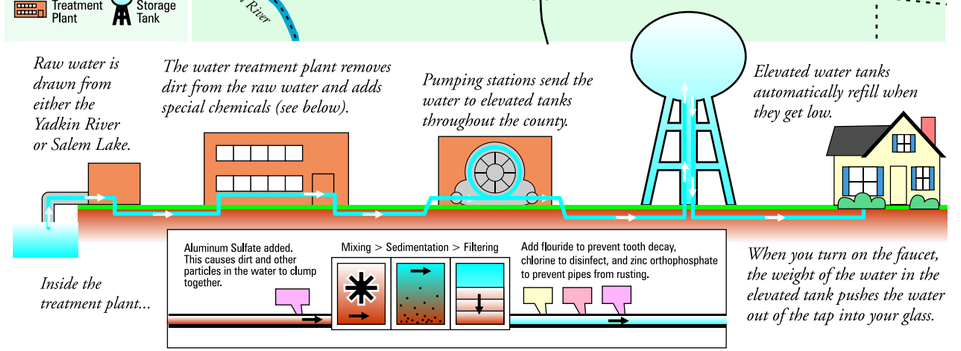
Copies of these results can be obtained by calling the City/County Utilities Water Quality Line at 336-946-2524.

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.