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Peak #	Component Name	Time [min]	Area [$\mu\text{V}\cdot\text{sec}$]
1		1.707	80217.17
2		2.913	30758.84
3		3.815	4199.70
4		5.089	314352.68
5	Chloroform	5.714	306593.80
6		7.109	6691.06
7		9.803	92291.70
8	Bromodichloromethane	10.129	505971.28
9		10.954	58670.30
10		12.220	8116.42
11		13.043	6971.28
12		14.019	1717.36
13	Dibromochloromethane	20.039	103762.45
14		20.746	2422.38
15		23.855	7153.69
16		26.112	26239.96
17	Bromoform	27.989	5830.31
18		29.574	10094.27
19		30.442	1162.72
20		30.691	7407.99
21		31.027	12150.42



*Providing
Quality
Water*



Water for Your Future

Water is one of our most precious resources and must be protected and used wisely. Huntsville Utilities Water Department works diligently to provide high quality water at the lowest price possible. The Water Department has been recognized numerous times over the last two decades for outstanding service and facilities. During 2010 the Water Department was recognized for their outstanding service and facilities multiple times. The Alabama Water Pollution Control Association (AWPCA) awarded Huntsville Utilities the "Best Operated Distribution System" in their division statewide for the water tanks and booster stations. This achievement was complimented by the "Best Operated Plant" awards presented to the Southwest Water Treatment and Lincoln/Dallas Water Treatment plants in their respective divisions. The Southwest Plant also received a Plant Optimization Award from ADEM.

Public interest and participation in decisions affecting drinking water or other utility issues is encouraged. Questions and concerns may be addressed to Jim Reynolds in the Water Quality Lab at 256-650-6374 or by email at

waterlab@hsvutil.org.

Regular monthly water board meetings, which



Huntsville Utilities Water Department performs many tasks in-house to keep customer rates down. Pictured above and at right, staff install a high service pump at one of the treatment plants. A crane lowers a part thru a skylight as staff wait to complete the installation.



are open to the public, are held at Huntsville Utilities located at 112 Spragins Street, usually on the last Tuesday of every month, at 8:00 a.m. The meeting schedule is posted on our website (www.hsvutil.org). Water board members include Mr. Stanley Statum, Mr. William M. Johnson, and Dr. James S. Wall, Jr.



Water pipe repairs and upgrades are a year-round task for Water Operations crews.

Water Testing Data Tables

Table of Primary Contaminants

Huntsville Utilities has chosen to provide their water customers a table of all contaminants for which the Environmental Protection Agency and Alabama Department of Environmental Management require testing.

CONTAMINANTS	MCL	AMOUNT DETECTED	DATE TESTED	RANGE	LIKELY SOURCE	CONTAMINANTS	MCL	AMOUNT DETECTED	DATE TESTED	RANGE	LIKELY SOURCE
Bacteriological						Bacteriological					
Total Coliform Bacteria	>5%	0	2010	0-0	Human and animal fecal waste	Di-(2-ethylhexyl) adipate (ppb)	400	N.D.	2008	N.D.	Leaching from PVC plumbing systems; discharge from chemical factories
(1) Turbidity-Surface Water (NTU)	TT	0.63	2010	.61 - .63	Soil runoff	Di- (2-ethylhexyl) phthalates (ppb)	6	N.D.	2008	N.D.	Discharge from rubber and chemical factories
Turbidity- Ground Water (NTU)	5.0	0.81	2008-2010	.07 - .81	Soil runoff	Dinoseb (ppb)	7	N.D.	2008	N.D.	Runoff from herbicide used on soybeans and vegetables
Fecal Coliform and E. Coli	0.0	0	2010	0.0	Human and animal fecal waste	Diquat (ppb)	20	N.D.	2008	N.D.	Runoff from herbicide use
Radiological						Radiological					
Beta/photon emitter (mrem/yr)	4	N.D.	2003	N.D.	Decay of natural and man-made deposits	1,2-Dibromoethane	50	N.D.	2008	N.D.	Residue from widely used fumigant
Gross Alpha emitters (pci/l)	15	2.8	2003	0 - 2.8	Erosion of natural deposits	Endothall (ppb)	100	N.D.	2008	N.D.	Runoff from herbicide use
Combined radium (pci/l)	5	0.5	2002	0 - .5	Erosion of natural deposits	Endrin (ppb)	2	N.D.	2008	N.D.	Residue of banned insecticide
Inorganic						Inorganic					
Antimony (ppb)	6	N.D.	2008-2010	N.D.	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder	Epichlorohydrin	TT	N.D.	2008	N.D.	Discharge from industrial chemical factories; added to water during treatment process
Arsenic (ppb)	50	N.D.	2008-2010	N.D.	Runoff from orchards; natural deposits; runoff from glass and electronics production wastes	Glyphosate (ppb)	700	N.D.	2008	N.D.	Runoff from herbicide use
Barium (ppm)	2	N.D.	2008-2010	N.D.	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	Heptachlor (ppt)	400	N.D.	2008	N.D.	Residue of banned termiticide
Beryllium (ppb)	4	N.D.	2008-2010	N.D.	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries	Heptachlor epoxide (ppt)	200	N.D.	2008	N.D.	Breakdown of heptachlor
Cadmium (ppb)	5	N.D.	2008-2010	N.D.	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints	Hexachlorobenzene (ppb)	1	N.D.	2008	N.D.	Discharge from metal refineries and agricultural chemical factories
Chromium (ppb)	100	N.D.	2008-2010	N.D.	Discharge from steel and pulp mills; erosion of natural deposits	Hexachloropentadiene (ppm)	50	N.D.	2008	N.D.	Discharge from chemical factories
Copper (ppm)	A.L.=1.3	0.075	2008-2010	0 - .075	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	gamma-BHC (Lindane) (ppt)	200	N.D.	2008	N.D.	Runoff/leaching from insecticide used on cattle, lumber, gardens
Cyanide (ppb)	200	N.D.	2008-2010	N.D.	Discharge from steel/metal factories; discharge from plastic and fertilizer factories	Methoxychlor (ppb)	40	N.D.	2008	N.D.	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Fluoride (ppm)	4	1.3	2010	.1 - 1.3	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories	Oxamyl [Vydate] (ppb)	200	N.D.	2008	N.D.	Runoff/leaching from insecticide used on apples, potatoes, and tomatoes
Lead (ppb)	A.L.=15	N.D.	2008-2010	N.D.	Corrosion of household plumbing systems; erosion of natural deposits	PCBs (ppt)	500	N.D.	2008	N.D.	Runoff from landfills; discharge of waste chemicals
Mercury (ppb)	2	N.D.	2008-2010	N.D.	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland	Pentachlorophenol (ppb)	1	N.D.	2008	N.D.	Discharge from wood preserving factories
Nitrate (ppm)	10	3.1	2008-2010	.52 - 3.1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	Picloram (ppb)	500	N.D.	2008	N.D.	Herbicide runoff
Nitrite (ppm)	1	N.D.	2008-2010	N.D.	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	Simazine (ppb)	4	N.D.	2008	N.D.	Herbicide runoff
Total Nitrate/Nitrite (ppm)	10	3.1	2008-2010	.52 - 3.1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	Toxaphene (ppb)	3	N.D.	2008	N.D.	Runoff/leaching from insecticide used on cotton and cattle
Selenium (ppb)	50	N.D.	2008-2010	N.D.	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines	Benzene (ppb)	5	N.D.	2010	N.D.	Discharge from factories; leaching from gas storage tanks and landfills
Sulfate (ppm)	500	47.7	2008-2010	2.72 - 47.7	Naturally present from the environment	Carbon Tetrachloride (ppb)	5	N.D.	2010	N.D.	Discharge from chemical plants and other industrial activities
Thallium	2	N.D.	2008-2010	N.D.	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories	Chlorobenzene (ppb)	100	N.D.	2010	N.D.	Discharge from chemical and agricultural chemical factories
Organic Chemicals						Organic Chemicals					
2-4D (ppb)	70	N.D.	2008	N.D.	Runoff from herbicide used on row crops	Dibromochloropropane (ppt)	200	N.D.	2010	N.D.	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
2,4,5,-TP (Silvex) (ppb)	50	N.D.	2008	N.D.	Residue of banned herbicide	o-Dichlorobenzene (ppb)	600	N.D.	2010	N.D.	Discharge from industrial chemical factories
Acrylamide	TT	N.D.	2008	N.D.	Added to water during sewage/wastewater treatment	p-Dichlorobenzene (ppb)	75	N.D.	2010	N.D.	Discharge from industrial chemical factories
Alachlor (ppb)	2	N.D.	2008	N.D.	Runoff from herbicide used on row crops	1,2- Dichloroethane (ppb)	5	N.D.	2010	N.D.	Discharge from industrial chemical factories
Atrazine (ppb)	3	N.D.	2008	N.D.	Runoff from herbicide used on row crops	1,1- Dichloroethene (ppb)	7	N.D.	2010	N.D.	Discharge from industrial chemical factories
Benzo (a) pyrene [PAHs] (ppt)	200	N.D.	2008	N.D.	Leaching from linings of water storage tanks and distribution lines	Cis- 1, 2,-Dichloroethene (ppb)	70	N.D.	2010	N.D.	Discharge from industrial chemical factories
Carbofuran (ppb)	40	N.D.	2008	N.D.	Leaching of soil fumigant used on rice and alfalfa	Trans- 1, 2- Dichloroethylene (ppb)	100	N.D.	2010	N.D.	Discharge from industrial chemical factories
Chlordane (ppb)	2	N.D.	2008	N.D.	Residue of banned termiticide	Dichloromethane (ppb)	5	N.D.	2010	N.D.	Discharge from pharmaceutical and chemical factories
Dalapon (ppb)	200	N.D.	2008	N.D.	Runoff from herbicide used on rights of way	1, 2 Dichloropropane (ppb)	5	N.D.	2010	N.D.	Discharge from industrial chemical factories
1,2-Dibromo-3-chloropropane (ppt)	200	N.D.	2008	N.D.	Runoff/leaching from insecticide used on cotton and cattle	Ethylbenzene (ppb)	700	N.D.	2010	N.D.	Discharge from petroleum refineries
						Ethylene dibromide (ppt)	50	N.D.	2010	N.D.	Discharge from petroleum refineries
						Stryrene (ppb)	100	N.D.	2010	N.D.	Discharge from rubber and plastic factories; leaching from landfills
						Tetrachloroethylene (ppb)	5	.56	2010	0 - .56	Leaching from PVC pipes; discharge from factories and dry cleaners
						1,2,4- Trichlorobenzene (ppb)	70	N.D.	2010	N.D.	Discharge from textile-finishing factories
						1, 1,1- Trichloroethane (ppb)	200	N.D.	2010	N.D.	Discharge from metal degreasing sites and other factories
						1,1,2- Trichloroethane (ppb)	5	N.D.	2010	N.D.	Discharge from industrial chemical factories
						Trichloroethylene (ppb)	5	N.D.	2010	N.D.	Discharge from petroleum refineries
						Toluene (ppb)	1	N.D.	2010	N.D.	Discharge from petroleum factories
						Vinyl Chloride (ppb)	2	N.D.	2010	N.D.	Leaching from PVC piping; discharge from plastics factories
						Xylenes (ppm)	10	N.D.	2010	N.D.	Discharge from petroleum factories; discharge from chemical factories

Chlorine residuals ranged from 0.4 ppm to 2.3 ppm free residual chlorine. The average concentration was 1.3 ppm. Residuals are monitored continuously. The MCL is 4.0 ppm.

Total Trihalomethane concentrations as Disinfection By-Products ranged from 0.0 to 85.0 ppb. The annual running average for 2010 was 34.5 ppb monitored quarterly. The MCL for these compounds is a running average of 80 ppb.

Haloacetic Acids (HAA) concentrations ranged from 0.0 to 62.8 ppb. The running annual quarterly average for 2010 was 27.1 ppb. The MCL for these compounds is 60 ppb.

TTHMs and HAAs are by-products of the chlorination process.

Fluoride averaged 0.92 ppm with a range from 0.10 to 1.30 ppm, with MCL at 4.0 ppm.

Huntsville Utilities Water Department personnel participate annually in the Madison County Drinking Water Festival teaching local students about the processes used to provide clean, quality drinking water.



Unregulated Contaminants

In addition to the primary water contaminants, Huntsville Utilities also monitors for some of the following unregulated contaminants as required by ADEM and EPA.

CONTAMINANT	AMOUNT DETECTED	CONTAMINANT	AMOUNT DETECTED
Aldicarb	N.D.	2,2-Dichloropropane	N.D.
Aldicarb Sulfone	N.D.	1,1-Dichloropropene	N.D.
Aldicarb Sulfoxide	N.D.	1,3-Dichloropropene	N.D.
Aldrin	N.D.	Trichlorofluoromethane	N.D.
Butachlor	N.D.	Hexachlorobutadiene	N.D.
Carbaryl	N.D.	Isopropylbenzene	N.D.
Dicamba	N.D.	p-Isopropyltoluene	N.D.
Dieldrin	N.D.	Chloroethane	N.D.
3-Hydroxycarbofuran	N.D.	Chloroform	30.2 ppb
Methomyl	N.D.	Chloromethane	N.D.
Metolachlor	N.D.	o-Chlorotoluene	N.D.
Metribuzin	N.D.	p-Chlorotoluene	N.D.
Propachlor	N.D.	Dibromomethane	N.D.
Bromobenzene	N.D.	m-Dichlorobenzene	N.D.
Bromochloromethane	N.D.	1,1-Dichloroethane	N.D.
Bromodichloromethane	8.39 ppb	Methyl Tertiary Butyl Ether	N.D.
Bromoform	N.D.	Naphthalene	N.D.
Bromomethane	N.D.	n-Propylbenzene	N.D.
n-Butylbenzene	N.D.	1,1,1,2-Tetrachloroethane	N.D.
sec-Butylbenzene	N.D.	1,2,3-Trichlorobenzene	N.D.
tert-Butylbenzene	N.D.	1,1,2,2-Tetrachloroethane	N.D.
Dibromochloromethane	1.33 ppb	1,2,3-Trichloropropane	N.D.
Dichlorodifluoromethane	N.D.	1,2,4-Trimethylbenzene	N.D.
1,3-Dichloropropane	N.D.	1,3,5-Trimethylbenzene	N.D.
RANGES OF DETECTED UNREGULATED CONTAMINANTS			
Bromodichloromethane	0.0 - 8.39 ppb	Chloroform	.580 - 30.2 ppb
Dibromochloromethane	0.0 - 1.33 ppb		

Secondary Contaminants

ANALYTE	DATE TESTED	MCL, mg/L	RANGE	AVERAGE CONCENTRATION
Alkalinity, Total	2008-2010	N/A	42.6 - 155	95.3 mg/L
Aluminum, as Al	2008-2010	0.2	0 - .095	.019 mg/L
Calcium, as Ca	2008-2010	N/A	20.2 - 61.1	42 mg/L
Carbon Dioxide	2008-2010	N/A	5.7 - 27.4	12 mg/L
Chloride, as Cl	2008-2010	250	7.34 - 10.6	8.6 mg/L
Color	2008-2010	15	N.D.	N.D.
Copper, as Cu	2008-2010	1	0 - .075	0.02 mg/L
Methylene Blue Active Substance	2008-2010	0.5	N.D.	N.D.
Hardness	2008-2010	N/A	67.1 - 177	126.2 mg/L
Iron	2008-2010	0.3	N.D.	N.D.
Magnesium	2008-2010	N/A	4.06 - 6.01	5.18 mg/L
Manganese	2008-2010	0.05	0 - 0.096	.019mg/L
Odor	2008-2010	3	0 - 2	0.6 mg/L
pH	2008-2010	N/A	7.06 - 7.95	7.50
Silver	2008-2010	0.1	N.D.	N.D.
Sodium	2008-2010	N/A	1.86 - 14.7	5.47 mg/L
Specific Conductance	2008-2010	N/A	216 - 341	264 umho/cm
Total Dissolved Solids	2008-2010	500	148 - 216	180 mg/L
Zinc	2008-2010	5	N.D.	N.D.
Total Organic Carbon	2010	N/A	1.1 - 2.1	1.49 mg/L

Key to the Tables

AL - Action Level

µmho/cm - micromhos per centimeter

MCL - Maximum Contaminant Level

N/A - not applicable

MCLG - Maximum Contaminant Level Goal

N.D. - none detected

NTU - Nephelometric Turbidity Units

Footnotes

pCi/L - picocuries per liter (a measure of radioactivity)

(1) 100% of samples were below turbidity limits.

ppb - parts per billion, or micrograms per liter (ug/L)

(Turbidity has no health effects. However, contaminants in water that cause turbidity can provide a medium for bacterial growth.)

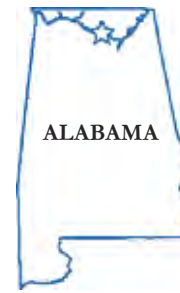
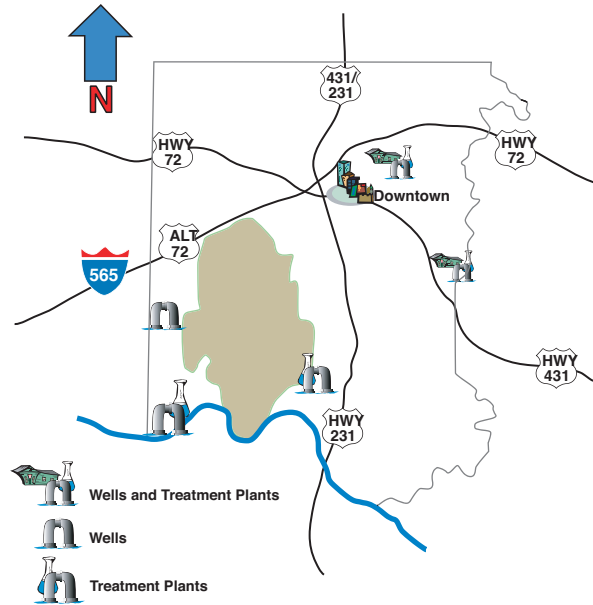
ppm - parts per million, or milligrams per liter (mg/L)

TT - Treatment Technique

About Your Water Sources

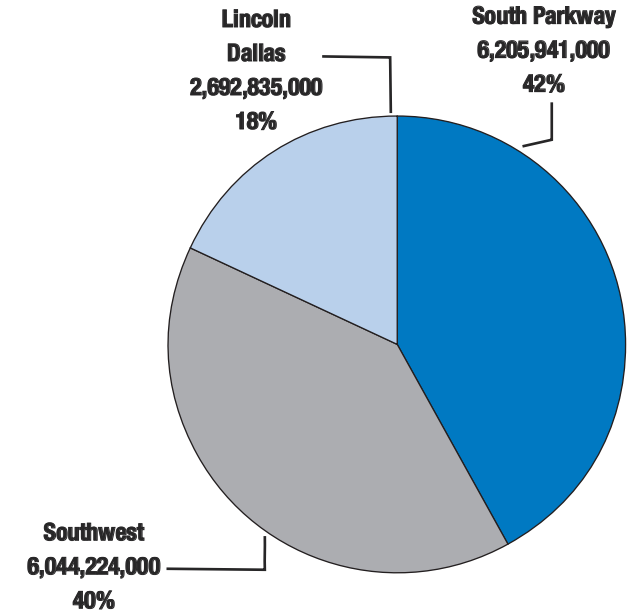
Huntsville Utilities Water Department is supplied by both surface and groundwater sources. Surface water from the Tennessee River is processed through two conventional surface water treatment plants, the South Parkway facility and the Southwest Treatment Plant. Groundwater is supplied from the Lincoln and Dallas Well Treatment Plant, the Hampton Cove Well Treatment Plant, and Williams Well. All groundwater sources are located in limestone aquifers. Huntsville Utilities has established a Wellhead Protection Plan.

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 it can pick up substances resulting from the presence of animals or from human activity.



Gallons Pumped per Source in 2010

2010 Total Pumped = 14,943,000,000 Gallons



IMPORTANT NOTICES

concerning water and your health

Some people may be more vulnerable to contaminants in drinking water than the general population. People who are immunocompromised such as cancer patients undergoing chemotherapy, organ transplant recipients, HIV/AIDS positive or other immune system disorders, some elderly and infants can be particularly at risk from infections. People at risk 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* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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 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).

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. Huntsville Utilities 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>. This water system also tests our source water for pathogens, such as *Cryptosporidium* and *Giardia* with no detections. You can also visit Huntsville Utilities website (www.hsvutil.org) for additional unregulated test results for pharmaceuticals, personal care products, endocrine disruptors and perchlorate.

Source Water Assessment

In compliance with the Alabama Department of Environmental Management (ADEM), Huntsville Utilities updated its source water assessment for all of our surface and ground water sources as well as renewing its water supply permit in 2010. The assessments include delineating (or mapping) the Source Water Assessment Area (SWAA) for the area of land that most directly contributes to the raw water quality used for drinking water, conducting an inventory of potential sources of contamination within the SWAA, and determining the susceptibility of the water supply to those contamination sources.

Included in the reports are a description of the Source Water Assessment Areas, a list of common sources of contamination and the risks associated with them, the inventory of potential sources of contamination within each delineation area and their associated susceptibility ranking and a map showing the location of contaminant sources identified in the contaminant inventory. Public meetings were held to inform our customers of our findings, and both plans are available for review, by appointment, at the water department office.

Definitions

Amount Detected: The highest level detected of a contaminant for comparison against the acceptable level for each parameter. These levels could be the highest single measurement, or an average of values depending on the contaminant.

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 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.

Action Level (AL): The concentration of a contaminant, which if exceeded, triggers treatment require-

ments that a water system must follow.

Range: The lowest to the highest values for all samples tested for each contaminant. If only one sample is tested, no range is listed for that contaminant in the table.

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

DIOXIN & ASBESTOS MONITORING STATEMENT: 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 was not required.



Huntsville Utilities
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www.hsvutil.org

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Huntsville Utilities 2011 Water Quality Report

By Order of the Environmental Protection Agency & The Alabama Department of Environmental Management

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.