The background of the report cover features a close-up of water splashing from a faucet, with a bowl of fresh fruit (raspberries, blackberries, and red grapes) in the lower-left corner. The overall color palette is dominated by blues and greens, with a dark blue curved graphic element on the left side.

ANNUAL WATER QUALITY REPORT

WATER TESTING
PERFORMED IN 2015

Presented By
Harris Co. WCID #1

Meeting the Challenge

Once again we are proud to present our annual drinking water report, covering all drinking water testing performed between January 1 and December 31, 2015. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to your homes and businesses. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

Please remember that we are always available to assist you should you ever have any questions or concerns about your water.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet on the Tuesday following the second Monday of each month, beginning at 6 p.m., at the Water Office, 125 San Jacinto, Highlands.

Important Health Information

You may be more vulnerable than the general population to certain microbial contaminants, such as *Cryptosporidium*, in drinking water. Infants, some elderly, or immunocompromised persons such as those undergoing chemotherapy for cancer; those who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders can be particularly at risk from infections.

You should seek advice about drinking water from your physician or health care provider. Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline at (800) 426-4791.



Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water that 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 these contaminants does not necessarily indicate that the water poses a health risk.

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 can acquire naturally occurring minerals, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban 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, urban 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 may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. For more information on the taste, odor, or color of drinking water, please contact our business office. For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Water Loss

In the Water Use Survey submitted to the Texas Water Development Board for the time period of January through December 2015, our system took in an estimated 266.4 million gallons of water. We sold an estimated 194.9 million gallons of water to our customers. Our system lost an estimated 71.4 million gallons of water in 2015. If you have any questions about the water loss, please call (281) 426-2115.

Where Do We Get Our Drinking Water?

The source of drinking water for Harris County WCID #1 is purchased surface water blended with 20 percent groundwater from the Chicot Aquifer. Our main well site is located on E. Houston Street in Highlands Texas. Purchased water comes from the Trinity River and is processed by Baytown Area Water Authority on Thompson Road.

For more information about your sources of water, please refer to the Source Water Assessment Viewer available at the following URL: <http://www.tceq.texas.gov/gis/swaview>.

Source Water Assessment

A Source Water Assessment Plan (SWAP) is now available at our office. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area, and a determination of each water supply's susceptibility to contamination by the identified potential sources.

Further details about sources and source water assessments are available on Drinking Water Watch at the following URL: <http://dww2.tceq.texas.gov/DWW/>. Our Water System ID # is TX1010159. The Baytown Area Water Authority Water System ID # is TX1011742

The TCEQ has completed an assessment of your source water, and results indicate that some of your sources are susceptible to certain contaminants. The sampling requirements for your water system are based on this susceptibility and previous sample data. Any detections of these contaminants may be found in this Consumer Confident Report. For more information on source water assessments and protection efforts at our system, contact Mark Taylor at (281) 426-2115.

Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent, according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Furthermore, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their Web site at www.nrdc.org/water/drinking/bw/exesum.asp.



QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Mark Taylor, Harris County WCID #1 General Manager, at (281) 426-2115.

Lead in Home Plumbing

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. This water supply is responsible for providing high-quality drinking water, but we 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 www.epa.gov/safewater/lead.

Benefits of Chlorination

Disinfection, a chemical process used to control disease-causing microorganisms by killing or inactivating them, is unquestionably the most important step in drinking water treatment. By far the most common method of disinfection in North America is chlorination.

Before communities began routinely treating drinking water with chlorine (starting with Chicago and Jersey City in 1908), cholera, typhoid fever, dysentery, and hepatitis A killed thousands of U.S. residents annually. Drinking water chlorination and filtration have helped to virtually eliminate these diseases in the U.S. Significant strides in public health are directly linked to the adoption of drinking water chlorination. In fact, the filtration of drinking water plus the use of chlorine is probably the most significant public health advancement in human history.

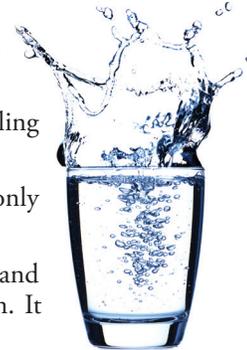
How chlorination works:

Potent Germicide Reduction in the level of many disease-causing microorganisms in drinking water to almost immeasurable levels.

Taste and Odor Reduction of many disagreeable tastes and odors like foul-smelling algae secretions, sulfides, and odors from decaying vegetation.

Biological Growth Elimination of slime bacteria, molds, and algae that commonly grow in water supply reservoirs, on the walls of water mains, and in storage tanks.

Chemical Removal of hydrogen sulfide (which has a rotten egg odor), ammonia, and other nitrogenous compounds that have unpleasant tastes and hinder disinfection. It also helps to remove iron and manganese from raw water.



Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program.

NOTE: Monthly testing found no total coliform bacteria or fecal coliform bacteria.

REGULATED SUBSTANCES									
				Harris County WCID #1	Baytown Area Water Authority				
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Atrazine (ppb)	2015	3	3	ND	NA	0.1	NA	No	Runoff from herbicide used on row crops
Barium (ppm)	2011	2	2	0.048	NA	0.0461 ¹	NA ¹	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta/Photon Emitters ² (pCi/L)	2010	50	0	ND	NA	5.6 ³	NA	No	Decay of natural and man-made deposits
Chloramines ⁴ (ppm)	2015	[4]	[4]	1.67	0.41–3.91	3.11	0.9–4.3	No	Water additive used to control microbes
Fluoride (ppm)	2014	4	4	0.72	NA	0.67 ¹	0.49–0.89 ¹	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2015	60	NA	40.7 ⁵	24.1–68.2	23.5	NA	No	By-product of drinking water disinfection
Nitrate (ppm)	2015	10	10	0.84	NA	0.061	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Simazine (ppb)	2015	4	4	NA	NA	0.08	NA	No	Herbicide runoff
TTHMs [Total Trihalomethanes] (ppb)	2015	80	NA	37.9 ⁶	25.2–44.1	46.5	NA	No	By-product of drinking water disinfection
Total Organic Carbon (ppm)	2015	TT	NA	NA	NA	6.44	3.93–6.44	No	Naturally present in the environment
Turbidity ⁷ (NTU)	2015	TT = 1	NA	NA	NA	0.23	0.05–0.23	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2015	TT = 95% of samples < or = 0.3 NTU	NA	NA	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2013	1.3	1.3	0.426	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2013	15	0	1.75	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	Harris County WCID #1		Baytown Area Water Authority		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Manganese (ppb)	2011	50	NA	18.9	NA	20.5 ¹	NA	No	Leaching from natural deposits
pH (Units)	2011	6.5–8.5	NA	8.2	NA	7.2 ¹	NA	No	Naturally occurring
Sulfate (ppm)	2014	250	NA	2	NA	42 ¹	NA	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2014	500	NA	262	NA	251 ¹	NA	No	Runoff/leaching from natural deposits
Zinc (ppm)	2011	5	NA	ND	NA	0.0427 ⁸	NA	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED SUBSTANCES ⁹

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Harris County WCID #1		Baytown Area Water Authority		TYPICAL SOURCE
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	
Bromodichloromethane (ppb)	2015	13.6	9.7–9.7	15	NA	By-product of drinking water disinfection
Bromoform (ppb)	2015	7.7	NA	NA	NA	By-product of drinking water disinfection
Chloroform (ppb)	2015	32.1	5–32.1	26.4	15–26.4	By-product of drinking water disinfection
Dibromochloromethane (ppb)	2015	15	1.6–15	5.1	NA	By-product of drinking water disinfection

UNREGULATED CONTAMINANT MONITORING RULE PART 3 (UCMR3) - HARRIS COUNTY WCID #1

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
Chromium-6 (ppb)	2013	0.17	ND–0.17
Molybdenum (ppb)	2013	3.93	2.1–3.93
Strontium (ppb)	2013	333	70–333
Vanadium (ppb)	2013	0.79	ND–0.79

¹ Sampled in 2015.

² The MCL for beta particles is 4 mrem/year. The U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

³ Sampled in 2009.

⁴ In the 2nd Quarter of 2015, we converted to free chlorine for maintenance of the distribution system. During this time, the 0.41 value was a free residual.

⁵ LRAA for 2nd Quarter of 2015.

⁶ LRAA for 3rd Quarter of 2015.

⁷ Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

⁸ Sampled in 2008.

⁹ Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Definitions

AL (Action Level): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): 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 the use of disinfectants to control microbial contaminants.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

SMCL (Secondary Maximum Contaminant Level): SMCLs are established to regulate the aesthetics of drinking water like appearance, taste and odor.

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