MEMORIAL VILLAGES WATER AUTHORITY

8955 GAYLORD DRIVE HOUSTON, TEXAS 77024
Ph: 713-465-8318 Fax: 713-465-8387

2020 DRINKING WATER QUALITY REPORT

(Consumer Confidence Report)

January 1, 2020 to December 31, 2020

Public Water Supply I.D. TX1010148

The United States Environmental Protection Agency (EPA) requires most drinking water suppliers in the country to provide a water quality report to their customers. This annual report concerns the quality of water provided by Memorial Villages Water Authority to the residents of Hedwig, Hunters Creek and Piney Point Villages. Questions concerning this report should be directed to our General Manager, Mr. Trey Cantu, by calling 713-465-8318.

Para más información sobre su calidad del agua, por favor llame al 713-465-8318.

OUR DRINKING WATER MEETS OR EXCEEDS ALL FEDERAL (EPA) DRINKING WATER REQUIREMENTS. In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health. We hope this report helps you become more knowledgeable about what's in the water you drink. **All drinking water may contain contaminants.** When drinking water meets federal standards there may not be any health based benefits to purchasing bottled water or point of use devices. 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, call EPA's Safe Drinking Water Hotline (1-800-426-4791). The following pages list many of the federally regulated/monitored constituents that have been found in your drinking water. **Secondary Constituents**: Many constituents (such as calcium, sodium or iron) which are often found in drinking water, can cause taste, color, and odor problems. These constituents are not necessarily causes for health concerns. Secondary constituents are not required to be reported in this document but they may greatly affect the appearance and taste of your water. For more information on taste, odor or color, contact the Water Authority at 713-465-8318.

WHERE DOES YOUR DRINKING WATER COME FROM? In 2020, the Water Authority provided 30.82% of its treated drinking water from its 5 water wells which draw water from the Evangeline Aquifer in Harris County. This type of water source is commonly referred to as ***groundwater***. The other 69.18% of our drinking water came from the City of Houston (COH) in the form of ***surface water*** from Lake Houston, Harris County. ***Surface water*** comes from rivers, lakes, streams, ponds, reservoirs, and springs. The TCEQ 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 Confidence Report. For more information on ***Source Water Assessments*** and protection efforts at our system, please contact Mr. Cantu at 713-465-8318. Further details about sources and source-water assessments are available in Drinking Water Watch at the following URL: **http://dww.tceq.texas.gov/DWW**.

SOURCES OF DRINKING WATER

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, in some cases radioactive material, and can pick up substances resulting from the presence of animals or from human activity. For further details about sources of water, go to:**http://gis3.tceq.state.tx.us/swav//Controller/index.jsp?wtrsrc=**

Contaminants that may be present in source water:

- 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 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 storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

SPECIAL NOTICE

You may be more vulnerable than the general population to certain microbial contaminants, such as Cryptosporidium, in drinking water. **INFANTS,** some **ELDERLY** or **IMMUNO-COMPROMISED PERSONS** such as those undergoing **CHEMOTHERAPY** for cancer; those who have undergone **ORGAN TRANSPLANTS**; those who are undergoing treatment with certain **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 healthcare providers. Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* & other microbial contaminates are available from the Safe Drinking Water Hotline at: 1-800-426-4791.

WHAT YOU NEED TO KNOW TO BETTER UNDERSTAND WHAT IS IN YOUR WATER

Definitions and Abbreviations: The following tables contain scientific terms and measures, some of which may require explanation.

Maximum Contaminant Level (MCL): The highest permissible level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available **TT**. **Treatment Technology**: A process used to reduce contaminates in water.
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL): The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no know or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.
Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. **Action Level Goal (ALG)** The level of a contaminate in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.

Avg: Regulatory compliance with some MCL's are based on running average of monthly samples.
pCi/l = Pico curies per liter (a measure of radioactivity); **NTU =** Nephelometric Turbidity Units; **ppm =** parts per million or milligrams per liter (mg/l); **ppb =** parts per billion, or micrograms per liter (ug/l): **ppt** = parts per trillion, or nanograms per liter; **ppq** = parts per quadrillion, or picograms per liter (pg/L); **MFL** = million fibers per liter (a measure of asbestos); **mrem** = millirems per year (a measure of the radiation that is absorbed by the body; **ND** = Not Detected; **NA** = Not Applicable. **SCL** = Secondary Contaminant Level.

Level 1 Assessment: A study of the water system to identify potential problems & determine, if possible, why total coliform bacteria have been found in a water system.

Level 2 Assessment: A very detailed study of the water system to identify potential problems & determine, if possible, why an E.coli MCL violation has occurred and/or why total coliform bacteria have been found in a water system on multiple occasions.

TABLE I = Information on the ***groundwater*** supplied by the Water Authority as part of its drinking water supply.
TABLE II = Information on the ***surface water*** supplied by Houston to the Water Authority as part of its drinking water supply.

TABLE I - Memorial Villages Water Authority's Public Water Supply System — I.D. No. 1010146
2020* CONTAMINANTS DETECTED IN YOUR DRINKING WATER

REGULATED CONTAMINANTS

Year/ Range	Constituent	Highest Level	Range of Levels	MCLG	MCL	Unit of Measure	Source of Constituent
2020	Arsenic	<0.002	0.0 — <0.002	0	10	ppb	Erosion of natural deposits; Runoff from orchards And from glass and electronics production wastes.
2020	Barium	0.0601	0.0601 — 0.0601	2	2	ppm	Erosion of natural deposits; Discharge of drilling wastes and metal refineries.
2020	Beryllium	< 0.0008	0 — < 0.0008	4	4	ppm	Discharge form metal refineries & coal-burning factories; discharge from electrical, aerospace & defense.
2020	Cadmium	< 0.001	0 — < 0.001	5	5	ppm	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; runoff from waste batteries.
2020	Chromium	< 0.01	0 — < 0.01	100	100	ppm	Discharge from steel & pulp mills; Erosion of natural deposits.
2020	Fluoride	0.22	0.2 — 0.22	4	4	ppm	Erosion of natural deposits; Water additive which promotes strong teeth. Discharge from fertilizer & aluminum factories.
2020	Mercury	<0.0004	0 — < 0.0004	2	2	ppm	Erosion of natural deposits; Discharge from refineries & factories; runoff from landfills/croplands.
2020	Nitrate as (N)	0.45	0.33 — 0.45	10	10	ppm	Erosion of natural deposits. Runoff from fertilizer use; leaching from septic tanks & sewage.
2020	Cyanide	140	0.00 — 140	200	200	ppb	Discharge from plastic and fertilizer factories. Discharge from steel/metal factories.
2020	Selenium	<0.003	0 — <0.003	50	50	ppm	Discharge from petroleum and metal refineries; erosion of natural deposits discharge from mines.
2020	Thallium	< 0.0004	0 — <0.0004	0.5	2	ppm	Discharge from electronics, glass & leaching from ore-processing sites; Drug factories.

RADIOACTIVE CONTAMINATES*

		Highest Level Detected	Range of Levels	MCLG	MCL	Unit of Measure	
01/04/17	Uranium	2.4	0.0 — 2.4	0	30	ug/L	Erosion of natural deposits.
01/04/17	Combined Radium (226 & 228)	1.23	0.0 — 1.23	0	5	pCi/L	Erosion of natural deposits.
01/04/17	Gross alpha excluding radon & uranium	4.3	0 — 4.3	0	15	pCi/L	Erosion of natural deposits.
01/04/17	Gross beta emitters	4.3	0 — 4.3	0	50	pCi/L	Decay of natural & manmade deposits.

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

Maximum Residual Disinfectant Level—No violation associated with disinfectant residuals.

Year	Disinfectant	Average Level	Min Level	Max Level	MRDL	MRDLG	Units	Source of Disinfectant
2020	Chloramine	3.17	0.10	5.40	4.0	4.0	ppm	Disinfectant used to control microbes.

Disinfection By-Products Year	Constituent	Highest Level	Range of Level	MCLG Level	MCL	Unit of Measure	Source of Constituent
2020	Total Haloacetic Acids	28	0.00 —34.8	No Goal	60	ppb	Byproduct of drinking water disinfection.
2020	Total Trihalomethanes	33	0.00— 46.2	No Goal	80	ppb	Byproduct of drinking water disinfection.

SYNTHETIC ORGANICS including Pesticides and Herbicides—No Violations

Year	Constituent	Highest Level	Range of Level	MCLG Level	MCL	Unit of Measure	Source of Constituent
2020	Atrazine	0.18	0.17 — 0.18	3	3	ppb	Runoff from herbicides used on row crop
2020	Simazine	0.09	0.07— 0.09	4	4	ppb	Herbicide runoff

Total Coliform: MCLG=0; One positive monthly sample. MCL=2 or more/month: NO VIOLATION-Naturally present in the environment.

E. Coli or Fecal Coliform: Total No. of Positive E. Coli or Fecal coliform Samples = ZERO (-0-) NO VIOLATION.

UNREGULATED INITIAL DISTRIBUTION SYSTEM EVALUATION FOR DISINFECTION BYPRODUCTS: WAIVED OR NOT YET SAMPLED

TABLE I — CONTINUED - Memorial Villages Water Authority's Public Water Supply System — I.D. No. 1010146
2020* CONTAMINANTS DETECTED IN YOUR DRINKING WATER

Secondary and Other Regulated Constituents (No associated adverse health effects)

Year	Constituent	Average Level	Minimum Level	Maximum Level	Secondary Limit	Unit of Measure	Source of Constituent
2020	Aluminum	0.0466	0.020	0.0387	.05	ppm	Abundant—naturally occurring Element.
2017	Bicarbonate	246.33	217.0	295.0	N/A	ppm	Corrosion of carbonate rocks
2020	Calcium	43.2	43.2	43.2	N/A	ppm	Abundant—naturally occurring element.
2020	Copper	< 0.0020	< 0.0020	< 0.020	1	ppm	Corrosion of household plumbing systems; erosion of natural deposits leaching from wood preservatives.
2020	Hardness as $CaCO_3$	125	125	125	N/A	ppm	Naturally occurring calcium & magnesium.
2020	Iron	<0.01	<0.01	<0.01	0.3	ppm	Erosion of natural deposits; iron or steel water delivery.
2020	Magnesium	4.26	4.26	4.26	N/A	ppm	Abundant naturally occurring element.
2020	Manganese	0.0026	0.0026	0.0026	.05	ppm	Abundant naturally occurring element.
2020	Nickel	0.0026	0.0026	0.0026	N/A	ppm	Erosion of natural deposits.
2020	Potassium	4.75	4.75	4.75	N/A	ppm	Naturally occurring in nature.
2020	pH	7.6	7.6	7.6	> 7	units	Measure of waters corrosivity.
2020	Sodium	27.3	27.3	27.3	N/A	ppm	Erosion of natural deposits; byproduct of oil field activity.
2020	Sulfate	37.0	37.0	37.0	300	ppm	Naturally occurring; common industrial byproduct; byproduct of oil field activity.
2020	Total Alkalinity as $CaCO_3$	99.0	95.0	103.0	N/A	ppm	Naturally occurring in mineral salts.
2020	Total Dissolved Solids	240.5	239.0	242.0	1000	ppm	Total dissolved mineral constituents in water.

LEAD and COPPER

Year	Constituent	90th Percentile	No. of Sites Exceeding AL	Action Level	Unit of Measure	Source of Constituent
2020	Copper	0.1647	0	1.3	ppm	Corrosion of household plumbing systems; Erosion of natural deposits.
2020	Lead	4.9	2	15	ppb	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.

MCLG—Copper = 1.3 MCLG—Lead = 0 No Levels Above MCL

LEAD in Drinking Water: 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. We are responsible for providing high quality drinking water, but it 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 at (1-800-426-4791) or by logging on to EPA's web site at: **http://www.epa.gov/safewater/lead.**

ARSENIC: While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

NITRATE: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than 6 months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, ask for advice from your health care provider.

COLIFORM BACTERIA are used as indicators of microbial contamination of drinking water because testing for them is easy. While not disease-causing organisms themselves, they are often found in association with other microbes that are capable of causing disease. Coliform bacteria are more hardy than many disease-causing organisms; therefore, their absence from water is a good indication that the water is microbiologically safe for human consumption. **TURBIDITY**—has no health effects. However, it can interfere with disinfection & provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms including bacteria, viruses & parasites that can cause nausea, diarrhea & associated headaches.

PUBLIC PARTICIPATION OPPORTUNITIES FOR MEMORIAL VILLAGES WATER AUTHORITY

BOARD MEETINGS: Generally-1st Tuesday of each Month

LOCATION: 8955 Gaylord Drive, Houston, 77024

TIME: 7:00 p.m.

FOR INFORMATION CALL: 713-465-8318

VISIT OUR WEB SITE AT: WWW.MVWA.ORG

DISINFECTANTS IN DRINKING WATER

The drinking water provided to you contains **Chloramines** as a disinfectant which provides protection from waterborne diseases but can cause problems to persons dependent on dialysis. You are encouraged to discuss this with your health care provider. Chloraminated water may also be toxic to fish. For more information about the use of chloramines contact the Water Authority at 713-465-8318.

For 2020:

Disinfectant used: Chloramines (chlorine + ammonia)

Quarterly average levels:	Jan. - Mar.	2.84 mg/L
	Apr. - June	3.35 mg/L
	July - Sept.	3.28 mg/L
	Oct. - Dec.	3.20 mg/L
Lowest single sample result:		0.10 mg/L
Highest single sample result:		5.40 mg/L
Annual average of all samples:		3.17 mg/L
Maximum Residual Disinfectant Level (MRDL):		4.0 mg/L*
Maximum Residual Disinfectant Level Goal (MRDLG):		4.0 mg/L*

*Measured as chlorine as an annual average

Unregulated Contaminants

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

Chromium in Drinking Water

The current federal drinking water standard for total chromium is 0.1 mg/L or 100 ppb. Chromium-6 and Chromium-3 are covered under the total chromium standard. The level of Total Chromium in your drinking water in 2020 measured < 0.0100 mg/L or what is consider lower than the detectable level. If your water supply measures ever exceeds the federal standard for Total Chromium, consumers will be notified. For

TABLE II - City of Houston: Surface Water supplied to Memorial Villages Water Authority

Houston Entry Points 101 - East Water Plant III Houston's Main System I.D. No. 1010013

2020* CONTAMINANTS DETECTED IN YOUR DRINKING WATER; **NONE WERE ABOVE THE MCL**

Regulated Contaminates

Year	Constituent	Detected Level	Unit of Measure	MCL	MCLG	Source of Constituent
2020	Arsenic	<0.002	ppm	10*	0	Erosion of natural deposits; Runoff from orchards and from glass and electronic production waste. production waste.
	*(*New arsenic values were effective January 23, 2006. In the event of a violation, you will be notified)*					
2020	Atrazine	0.25	ug/L	3	3	Runoff from herbicide used on row crops.
2020	Barium	0.0554	mg/L	2	2	Erosion of natural deposits; Discharge of drilling wastes and metal refineries.
2020	Fluoride	0.21	mg/L	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
2020	Nitrate as (N)	0.25	mg/L	10	10	Erosion of natural deposits; Runoff from fertilizer use; Leaching from septic tanks and sewage.
2020	Cyanide	0.11	mg/L	0.2	0.2	Discharge from plastic and fertilizer factories.
2020	Simazine	0.07	ug/L	4	4	Discharge from steel/metal factories.
RADIOACTIVE CONTAMINATES						
2020	Radium 228	1.92	pCi/l	5	0	Erosion of natural deposits.
2020	Alpha Emitters	13	pCi/l	15	0	Erosion of natural deposits.
2020	Beta Emitters	4.9	pCi/l	50	0	Erosion of natural deposits.
2020	Uranium	14.2	ug/L	30	0	Erosion of natural deposits.

SECONDARY and OTHER UNREGULATED CONSTITUENTS

Year/ Range	Constituent	Detected Level	Unit of Measure	SCL	Source of Constituent
2020	Aluminum	0.0619	ppm	50 to 200	Naturally occurring element.
2019	Bicarbonate	61	ppm		Corrosion of carbonate rocks such as limestone.
2020	Calcium	39.6	ppm		Naturally occurring element.
2020	Chloride	34	ppm	250	Erosion of natural deposits; Discharge of drilling
2020	Hardness-$CaCO_3$	116	ppm		Naturally occurring calcium & magnesium.
2020	Alkalinity-Total	95	ppm		Naturally occurring soluble mineral salts.
2020	Sulfate	31	ppm	250	Naturally occurring; common industrial byproduct
2020	Iron	<0.010	ppm	300	Erosion of natural deposits
2020	Magnesium	4.06	ppm		Abundant occurring natural element.
2020	Manganese	0.0026	ppb	50	Abundant occurring natural element.
2020	Nickel	0.0022	ppm		Erosion of natural deposits.
2020	Sodium	24.4	ppm		Erosion of natural deposits. Byproduct of oil fields.
2020	Total Dissolved Solids	205	ppm	500	Total dissolved mineral constituents in water.
2020	pH	7.6	units	6.5—8.5	Measure of waters corrosivity.
2020	Potassium	4.43	mg/L		Naturally occurring in nature.

Turbidity: Year	Avg.	Max.	Unit of Measure	Lowest Monthly % of samples Meeting Limits	Turbidity Limits	Source of Constituent
2020	0.10	0.82	NTU	98.90%	0.3	Soil Runoff

Additional information concerning the City of Houston's Water Quality may be obtained by calling the Water Authority at 713-465-8318 or the Water Production Branch of the Department of Public Works, City of Houston at 713-842-4001.

***Or latest information available.**

Este reporte incluye información importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono 713-465-8318.