

## 2016 CONSUMER CONFIDENCE REPORT (CCR)

### Lake MUD

(PWS ID: TX1011741)

Annual Water Quality Report for the period of January 1 to December 31, 2016

*THIS REPORT IS INTENDED TO PROVIDE YOU WITH IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER AND THE EFFORTS MADE BY THE WATER SYSTEM TO PROVIDE SAFE DRINKING WATER.*



Issued June 2017

### Where do we get our drinking water?

The source of drinking water used by Lake MUD is purchased surface water from the Baytown Area Water Authority. The water comes from the Coastal Industrial Authority Canal. The TCEQ has completed a Source Water Assessment for all drinking water systems that own their sources. The report describes the susceptibility and types of constituents that may come into contact with your drinking water source based on human activities and natural conditions. The system(s) from which we purchase our water received the assessment report. For more information on source water assessments and protection efforts at our system, contact TOPS.

*The water system with Lake MUD was on interconnect with Baytown Area Water Authority during the calendar year of 2016 for their water source. Attached you will find a copy of the regulated contaminant detected table for BAWA. If you require additional information about BAWA's water please call 281-426-3517.*

### PUBLIC PARTICIPATION OPPORTUNITIES

**DATE: BOARD OF DIRECTORS MEET ON THE THIRD THURSDAY OF EACH MONTH.**

**TIME: 5:00 P.M.**

**LOCATION: 7410 BREDA, BAYTOWN, TX 77521**

**PHONE: 281-807-9500**

To learn about future public meetings (concerning your drinking water), or to request one be scheduled, please call us or email us at [customerservice@topswater.com](mailto:customerservice@topswater.com).

### Water Saving Tips



- A high-efficiency shower head can save you up to \$52.00 a year.
- Aerators on kitchen and bathroom faucets can save you up to \$37.00 a year by cutting in half the amount of water used by each faucet.
- Lawn and garden watering make up nearly 40% of total household water use. 1 inch per week will keep your yard green and promote deep root growth.
- Washing only full loads can save up to 3,400 gallons a year.

### Is my water safe?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations that 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. 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. Contaminants that may be present in sources 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 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 by-products of industrial processes and petroleum production, 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.

### 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 can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

### Information about 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 and whether future regulations are warranted. Many constituents (such as calcium, sodium, or iron) which are often found in drinking water can cause taste, color, and odor problems but are not necessarily causes for health concerns. For more information on taste, odor, or color of drinking water, please contact the systems business office.

### En Español

*Este reporte incluye información importante sobre el agua para tomar. Para asistencia en español, favor de llamar al teléfono (281)807-9500.*

*In the last water loss audit submitted to the Texas Water Development Board for the time period of Jan-Dec 2015, our system lost an estimated 22,249,630 gallons of water, which is equivalent to about 13% of total gallons purchased. If you have any questions about the water loss audit please call TOPS at 281-807-9500.*

### 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 immune-compromised 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 and other microbial contaminants are available from the Safe Drinking Water Hotline at (800)426-4791.

The State of Texas monitors for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

### Regulated Contaminants

Disinfectants and Disinfection By-	Collection Date	Your Water	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Haloacetic Acids (HAA5)	2016	35	18.3-51.2	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM)	2016	50	35.2-64.4	No goal for the total	80	ppb	N	By-product of drinking water disinfection.
Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Nitrate [measured as Nitrogen]	2016	0.77	0.77-0.77	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

### LEAD AND COPPER

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. LAKE MUD 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](http://www.epa.gov/safewater/lead).

Lead/ Copper	Year	MCLG	Action Level	The 90 <sup>th</sup> Percentile	# of Sites Over AL	Units	Was This a Violation	Likely Source of Contaminant
Copper	2014	1.3	1.3	0.382	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2014	0	15	2	0	ppb	N	Corrosion of household plumbing systems; erosion of natural deposits.

LEAD AND COPPER RULE PROTECTS PUBLIC HEALTH BY MINIMIZING LEAD AND COPPER LEVELS IN DRINKING WATER, PRIMARILY BY REDUCING WATER CORROSION. LEAD AND COPPER ENTER DRINKING WATER MAINLY FROM CORROSION OF LEAD AND COPPER IN PLUMBING MATERIALS.

### Maximum Residual Disinfectant Level

Year	Disinfectant	Minimum Level	Average Level	Maximum Level	MRDL	MRDLG	Unit of Measure	Source of Chemical
2016	Chlorine	1.18	3.08	4.0	4.0	< 4.0	ppm	Disinfectant added to control microbes

ORGANIC CONTAMINANTS – NOT TESTED FOR OR NOT DETECTED

FECAL COLIFORM-NONE DETECTED

UNREGULATED CONTAMINANTS – NOT TESTED FOR OR NOT DETECTED

TURBIDITY – NOT REQUIRED

### Coliform Bacteria

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest No. of Positive	Fecal Coliform or E.Coli Maximum Contaminant Level	Total No. of Positive E.Coli or Fecal Coliform Samples	Violation	Likely Source of Contamination
0	1 positive monthly sample.	1		0	N	Naturally present in the environment.

### Unregulated Contaminants

Unregulated Contaminants	Collection Date	Your Water	Lowest Level Detected	Highest Level Detected	Units
Chlorodibromomethane	2016	4	2.4	5.6	ppb
Chloroform	2016	31.3	17	44.5	ppb
Bromodichloromethane	2016	14.4	13	16.4	ppb

Unregulated contaminants are those for which 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 and whether future regulation is warranted.

### Abbreviations and Definitions

PPQ - parts per quadrillion, or picograms per liter

NTU - Nephelometric Turbidity Units

MFL - million fibers per liter (a measure of asbestos)

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

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

**Maximum Residual Disinfectant Level Goal (MRDLG)** – 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 contamination.

**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 Contaminant Level (MCL)** – The highest permissible level of a contaminant 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 health risk. MCLGs allow for a margin of safety.

**Treatment Technique** – A required process intended to reduce the level of a contaminant in drinking water.

**Action Level** – 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 contaminant in drinking water below which there is not known or expected risk to health. ALGs allow for a margin of safety.

**MREM/year**- millirems per year (a measure of radiation absorbed by the body)

NA - not applicable

**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 known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

If a water system has performed additional monitoring which indicates the presence of other contaminants in the finished water, TCEQ recommends that systems find out if EPA has proposed a National Primary Drinking Water Regulation or issued a health advisory for that contaminant by calling the Safe Drinking Water Hotline (800-426-4791). TCEQ considers detects above a proposed MCL or health advisory level to indicate possible health concerns. To learn more about your water, please refer to the Source Water Assessment Viewer available at the following URL: <http://gis3.tceq.state.tx.us/swav/Controller/index.jsp?wtsrc=>

**2016 Annual Quality Water Report  
Baytown Area Water Authority  
281-420-5310  
PWS ID #1011742**

Este reporte incluye informacion importante sobre el agua para tomar. Si tiene preguntas o' discussions sobre este reporte en espanol, favor de liamar al tel. 281-420-5310 par hablar con una persona bilingue en espanol.

**We're pleased to present to you this 2016 Annual Water Quality Report.**

This report is designed to inform you about the quality of water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts made in continually improving the water treatment process and protecting our water resources. We are committed to ensuring the quality of your water.

Our drinking water is obtained from SURFACE water sources. It comes from the Trinity River by way of the Coastal Water Authority Canal. TCEQ completed an assessment of our source water and results indicate that some of our sources are susceptible to certain contaminants. The sampling requirements for our water system are based on this susceptibility and previous sample data. Any detection of these contaminants will be found in this report. For more information on source water assessments and protection efforts at our system, please contact us.

The Baytown Area Water Authority treats your water using conventional coagulation, sedimentation, disinfection, and filtration to remove or reduce possible harmful contaminants that may be in the source water. Ferric Chloride and a coagulant aid Cationic Polymer achieve coagulation. The treated water is then filtered through anthracite coal, sand, and gravel. Disinfection is achieved by the addition of ammonia and chlorine, which forms monochloramines.

If you have any questions about this report or concerning your water utility, please contact the Baytown Area Water Authority by calling 281-420-5310 or writing to 7425 Thompson Rd, PO Box 424, Baytown TX 77522.

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. The City of Baytown 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>.

### **EPA Wants You To Know:**

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 EPA's Safe Drinking Water Hotline (1-800-426-4791).

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.

#### **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 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 by-products 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.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit 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.

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 taste, odor, or color of drinking water please contact the system's business office.

Cryptosporidium is a microbial pathogen that may be found in water contaminated by feces. Although filtration removes Cryptosporidium, it cannot guarantee 100 percent removal nor can the testing method determine if the organisms are alive and capable of causing cryptosporidiosis, an abdominal infection with nausea, diarrhea and abdominal cramps that may occur after ingestion of contaminated water.

The **Baytown Area Water Authority** operates the Fritz Lanham Water Treatment Facility, which was completed in 1980. The facility is located on a 68-acre tract of land located at 7425 Thompson Road. This facility is operated on a 24-hour basis. The 15 member staff strives to produce the highest quality water ensuring that the safest and most reliable water is delivered to you. These efforts have been rewarded with the State of Texas awarding the plant and staff with “**Superior Water System**” rating. The staff takes great pride in providing safe drinking water and is looking to the future for new technology to ensure that safe and reliable drinking water will always be provided at your tap.

## 2016 Monitoring Results for Contaminants in Drinking Water for Baytown Area Water Authority

**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 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 (1-800-426-4791).**

Contaminant	Unit	MCLG Health Goal	MCL EPA's Limits	Level Detected	Range Detected	Violation (Yes / No)	Year <sup>1</sup> Sampled	Potential Source of Contamination
<b>Microbiological Contaminants</b>								
Total Coliform Bacteria	highest monthly % positive	0	Presence of coliform bacteria in 5% or more of monthly samples	0.00%	NA	NO	2016	Naturally present in the environment.
Fecal coliform and <i>E. Coli</i>	poitive / negative	0	0	0.00%	NA	NO	2016	Human and animal fecal matter.
Total Organic Carbon	ppm	NA	TT	7.62 (raw water)	5.62 - 7.87	NO	2016	Naturally present in the environment.
				5.07 (filtered water)	3.93 - 6.44			
				0.98 lowest removal ratio*				
*The value reported under "Level Found" for Total Organic Carbon (TOC) is the lowest ratio between percentage of TOC actually removed to the percentage of TOC required to be removed. The system provides alternative compliance criteria to meet TOC removal. One Total Coliform sample tested positive for total coliform, site was resampled 3 times and all re-samples tested negative for total coliform.								
Turbidity <sup>2</sup>	NTU	NA	TT / 0.3	0.1 - 0.2	100% met limits	NO	2016	Soil Runoff.
<b>Inorganic Contaminants</b>								
Beta Emitters	pCi/l <sup>4</sup>	0	50	5.6	NA	NO	2009	Decay of natural and man-made deposits.
<b>Radioactive Contaminants</b>								
Barium	ppm	2	2	0.0354	NA	NO	2016	Discharge of drilling wastes. Discharge from metal refineries. Erosion of natural deposits.
Copper	ppm	1.3	1.3 = AL	0.0028	All sites below AL	NO	2016	Corrosion of household plumbing systems. Erosion of natural deposits. Leaching from wood preservatives.
Fluoride	ppm	4	4	0.6	.49 - .89	NO	2016	Erosion of natural deposits. Water additive to promote strong teeth. Discharge from fertilizer and aluminum factories.
Lead	ppm	0	0.15 = AL	0.001	NA	NO	2016	Corrosion of household plumbing systems. Erosion of natural deposits.
Nitrate	ppm	10	10	0.68	NA	NO	2016	Runoff from fertilizer use. Leaching from septic tanks, sewage. Erosion of natural deposits.
Nitrite	ppm	1	1	< detection limit	NA	NO	2013	Runoff from fertilizer use. Leaching from septic tanks, sewage. Erosion of natural deposits.
<b>Synthetic Organic Contaminants</b>								
Atrazine	ppb	3	3	0.28	NA	NO	2016	Runoff from herbicide used on row crops.
Simazine	ppb	4	4	0.08	NA	NO	2016	Herbicide runoff.
<b>Volatile Organic Contaminants, Disinfectants and Disinfectant Byproducts</b>								
monochloramines	ppm	MRDLG = 4	MRDL = 4	3.12	2.57 - 3.85	NO	2016	Water additive used to control microbes.
Haloacetic Acids (HAA5)	ppb	NA	60	58.6	58.6	NO	2016	Byproduct of drinking water chlorination.
Total Trihalomethanes (TTHMs)	ppb	0	80	59	59	NO	2016	Byproduct of drinking water chlorination.

**Unregulated contaminants** are those for which 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 and whether future regulation is warranted. Any unregulated contaminants detected are reported in the following table.

Substance	Unit	Level Detected	Range	Year Sampled	Potential Source of Contamination
Bromodichloromethane	ppb	16.6	0-100	2015	Byproduct of drinking water chlorination.
Chloroform	ppb	43.1	0-100	2015	
Dibromochloromethane	ppb	3.3	0-100	2015	

Secondary and Physical Characteristics Results are from 2016 unless otherwise stated <sup>1</sup>			
Substance	Unit	Average Level Detected	Potential Source of Contamination
Bicarbonate	ppm	97	Corrosion of carbonate rocks such as limestone.
Calcium	ppm	37.2	Abundant naturally occurring element.
Chloride	ppm	38	Abundant naturally occurring element; used in water purification; byproduct of oil field activity.
Magnesium	ppm	3.02	Abundant naturally occurring element.
Manganese	ppm	0.0187	Abundant naturally occurring element.
pH	units	7.2	Measure of corrosivity of water.
Sodium	ppm	24.8	Erosion of natural deposits; byproduct of oil field activity.
Sulfate	ppm	23	naturally occurring; common industrial byproduct; byproduct of oil field activity.
Alkalinity	ppm	108	Naturally occurring soluble mineral salts.
Total Dissolved Solids	ppm	187	Total Dissolved mineral constituents in water.
Hardness	ppm	105	Naturally occurring calcium.
Zinc	ppm	0.0245	Moderately abundant naturally occurring element; used in the metal industry.

**NOTES:**

<sup>1</sup>The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, is more than one year old.

<sup>2</sup>Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system

<sup>3</sup>Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort and anemia.

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

## **Definitions**

**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.

**Maximum Residual Disinfectant Level Goal (MRDLG):** 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.

**Maximum Residual Disinfectant Level (MRDL):** 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.

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

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

**90th Percentile:** 90% of samples are equal to or less than the number in the chart.

**NTU (Nephelometric Turbidity Units):** A measure of clarity.

**NA:** Not applicable.

**ND:** Not detectable at testing limits.

**PPB (parts per billion):** micrograms per liter (ug/l).

**PPM (parts per million):** milligrams per liter (mg/l).

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

**MREM (millirems):** a measure of radiation absorbed by the body.