

THE TOWN OF
BAGDAD
A · R · I · Z · O · N · A



2020
Water Quality
Consumer Confidence Report

Public Water System ID Number	Public Water System Name	
AZ04-13011	Freeport- McMoRan Bagdad Town	
Contact Name and Title	Phone Number	E-mail Address
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Este informe contiene información muy importante sobre el agua usted bebe.
Tradúscalo ó hable con alguien que lo entienda bien.

Bagdad recommends that customers serving more than one housing unit (for example, apartments, nursing homes) as well as schools and businesses post a copy of this report in a conspicuous place.

About This Report

Freeport-McMoRan Bagdad Inc. (FMBI) is committed to providing a safe supply of drinking water to our customers. We issue this report by July 1st of every year describing the quality of your drinking water to comply with state and United States Environmental Protection Agency (EPA) regulations. Much of the language used is mandated by regulations. This report provides valuable information about your drinking water, including information about its source and quality.

We are pleased to report that Bagdad's water met or exceeded all drinking water standards set by the state and federal governments for 2020.



Whom Do I Contact with Questions about Bagdad's Drinking Water?

If you would like more information on the quality of your drinking water, have questions regarding this report, or require additional copies, please contact Christina M Grijalva, Environmental Scientist II, at 928-633-6667.

We want our valued customers to be informed about their water quality. If you would like to learn more about public participation or to attend any of our regularly scheduled meetings, please contact Kristopher Garcia, Utilities Supervisor, at 928-633-3191 for additional opportunities and meeting dates and times.

Drinking Water Sources

The sources of drinking water (both tap 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.

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 (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Our major water source is Francis Creek Springs located fifteen miles northwest of the town of Bagdad. This source, because of its approved encasements, is considered “groundwater” by the Arizona Department of Environmental Quality (ADEQ). We have six groundwater wells that provide additional water and range from 400 to 700 feet in depth. Four of the wells are located three to six miles northeast of Bagdad. The wells can be operated independently or together with the Francis Creek source to provide water to the town and mine. The remaining two wells are located one mile east of Sycamore Mobile Home Park. These wells can be operated independently or together with the Francis Creek source and the other wells to provide water to the mobile home park.



Source Water Assessment

The Source Water Assessment (SWA) Program, developed and implemented by ADEQ under EPA guidance, was created to promote community awareness of water quality issues and to encourage the protection of drinking water sources at the community level. ADEQ gathers information on drinking water sources – including wells, surface water intakes, and springs – and evaluates the extent to which the water source is vulnerable to natural or man-made contamination from sources such as gas stations, landfills, dry cleaners, agriculture fields, wastewater treatment plants, and mining activities.

ADEQ has evaluated the source water areas in Yavapai County including the source waters for the FMBI drinking water system. The SWA for the FMBI drinking water system has been designated as low risk. A low risk designation indicates that most source water protection measures are either already implemented, or the hydrogeology is such that the source water protection measures will have little impact on protection.

Further source water assessment documentation can be obtained by contacting ADEQ, or visiting the Surface Water Monitoring and Assessment web page at <http://www.azdeq.gov/programs/water-quality-programs/surface-water-monitoring-and-assessment>.



Drinking Water Contaminants

To ensure that Bagdad's tap water is safe to drink, your water undergoes an assortment of tests for contaminants which are regulated by the EPA and ADEQ. These substances are discussed below:

Microbial Contaminants: Such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife

Inorganic Contaminants: Such as salts and metals that can be naturally-occurring or 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 storm water runoff, and residential uses

Organic Chemical Contaminants: Such as synthetic and volatile organic chemicals, which



are by-products of industrial processes and petroleum production, and may come from gas stations, urban storm water runoff, and septic systems.

Radioactive Contaminants: That can be naturally occurring or be the result of oil and gas production and mining activities.



Vulnerable Population

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. Some people may be more vulnerable to contaminants in drinking water than the general population.

Immuno-compromised persons such as persons 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.

For more information about contaminants and potential health effects, or to receive a copy of the EPA and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and microbial contaminants call the EPA Safe Drinking Water Hotline at 1-800-426-4791.

Lead Informational Statement:

Lead, in drinking water, is primarily from materials and components associated with service lines and home plumbing. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. The Freeport-McMoRan Bagdad Town System 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 www.epa.gov/safewater/lead.



Tips to Conserve Water



Water plants during the coolest part of the day



Call Utilities to fix leaking toilets and faucets



Take shorter showers



Clean sidewalks and driveways with a broom instead of a hose



Turn off the tap when brushing your teeth



Do not over water lawns



Use the dishwasher only when it's full



Plug the sink instead of running the tap to rinse your razor



Wash your fruits and vegetables in a pan of water instead of running water from the tap

Other Water Resources

Arizona Safe Drinking Water Database - View all regulated water quality sampling results of any drinking water system https://azsdwis.azdeq.gov/DWW_EXT/

Water Use it Wisely - Arizona-based water conservation campaign with water saving tips, calculators, and games <https://wateruseitwisely.com/>

Arizona Department of Environmental Quality: My Community - Find out what environmental issues are going on in your community and around the state <http://www.azdeq.gov/MyCommunity>

Definitions and Abbreviations

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

Level 1 Assessment: A study of the water system to identify potential problems and determine (if possible) why total coliform bacteria was present.

Level 2 Assessment: A very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria was present.

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

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 (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.

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.

Minimum Reporting Limit (MRL): The smallest measured concentration of a substance that can be reliably measured by a given analytical method.

Millirems per year (MREM): A measure of radiation absorbed by the body.

Not Applicable (N/A): Sampling was not completed by regulation or was not required.

Not Detected (ND or <): Not detectable at reporting limit.

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

Million fibers per liter (MFL)

Picocuries per liter (pCi/L): Measure of the radioactivity in water.

Revised Total Coliform Rule (RTCR): The revision to the 1989 Total Coliform Rule (TCR).

ppm: Parts per million or Milligrams per liter (mg/L)

ppb: Parts per billion or Micrograms per liter (µg/L)

ppt: Parts per trillion or Nanograms per liter (ng/L)

ppq: Parts per quadrillion or Picograms per liter (pg/L)

ppm x 1000 = ppb

ppb x 1000 = ppt

ppt x 1000 = ppq

Your Drinking Water Data - Regulated Contaminants

The data in the attached tables are from water samples that have been analyzed by independent laboratories certified by the Arizona Department of Health Services. The analytic results shown on the following tables are for the period of January 1, 2020 through December 31, 2020 (or the last frequency test date within the last five years, in compliance with applicable regulations).

NOTE: The ADEQ Monitoring Assistance Program (MAP) tested for regulated volatile organic compounds (VOCs) in March 2020 and none were detected, unless otherwise noted. The ADEQ MAP tested for synthetic organic contaminants (SOCs) and Aroclor contaminants in March 2020 and none were detected.

EPDS # 2: SYCAMORE MOBILE HOME PARK TANK

Microbiological (RTCR)	TT Violation Y or N	Number of Positive Samples	Positive Sample(s) Month & Year	MCL	MCLG	Likely Source of Contamination	
E. Coli	N	0	N/A	0	0	Human and animal fecal waste	
Fecal Indicator (coliphage, enterococci and/or E. coli)	N	0	N/A	0	0	Human and animal fecal waste	
	MCL Violation Y or N	Running Annual Average	Range of All Samples (Low-High)			Sample Month & Year	Likely Source of Contamination
Disinfectants				MRDL	MRDLG		
Chlorine/Chloramine (ppm)	N	1.2	0.7-2.20	4	4	12/2020	Water additive used to control microbes
Disinfection By-Products				MCL	MCLG		
Haloacetic Acids (HAA5) (ppb)	N	<2	<2	60	N/A	07/2020	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM) (ppb)	N	3.9	3.9	80	N/A	07/2020	Byproduct of drinking water disinfection
Inorganic Chemicals (IOC)							
Arsenic ¹ (ppb)	N	5.8	4.6-6.9	10	0	12/2020	Erosion of natural deposits, runoff from orchards, runoff from glass and electronics production wastes
Nitrate ² (ppm)	N	1.2	1.2	10	10	03/2020	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	N	19	19	N/A	N/A	03/2020	Erosion of natural deposits
Lead & Copper	MCL Violation Y or N	90 th Percentile ³	Number of Samples Exceeds AL	AL	ALG		
Copper (ppm)	N	0.075	0	1.3	1.3	06/2018	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	N	<0.0050	0	15	0	06/2018	Corrosion of household plumbing systems; erosion of natural deposits

¹ **Arsenic** is a mineral known to cause cancer in humans at high concentration and is linked to other health effects, such as skin damage and circulatory problems. If arsenic is less than or equal to the MCL, your drinking water meets EPA's standards. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water, and continues to research the health effects of low levels of arsenic.

² **Nitrate** in drinking water at levels above 10 ppm is a health risk for infants of less than six 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, and detected nitrate levels are above 5 ppm, you should ask advice from your health care provider.

³ **90th Percentile** is the product of the number of samples taken during the monitoring period multiplied by 0.9. The sample concentration in the numbered sample yielded by the concentration is the 90th percentile calculation.

EPDS # 3: FRANCIS CREEK CHLORINATOR POST-CHLORINATION

Microbiological (RTCR)	TT Violation Y or N	Number of Positive Samples	Positive Sample(s) Month & Year	MCL	MCLG	Likely Source of Contamination	
E. Coli	N	0	N/A	0	0	Human and animal fecal waste	
Fecal Indicator (coliphage, enterococci and/or E. coli)	N	0	N/A	0	0	Human and animal fecal waste	
	MCL Violation Y or N	Running Annual Average	Range of All Samples (Low-High)			Sample Month & Year	Likely Source of Contamination
Disinfectants				MRDL	MRDLG		
Chlorine/Chloramine (ppm)	N	0.97	0.3-1.7	4	4	12/2020	Water additive used to control microbes
Disinfection By-Products				MCL	MCLG		
Haloacetic Acids (HAA5) (ppb)	No	3.7	3.7	60	N/A	07/2020	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM) (ppb)	No	10.9	10.9	80	N/A	07/2020	Byproduct of drinking water disinfection
Inorganic Chemicals (IOC)							
Arsenic ¹ (ppb)	N	6.5	5.3-7.6	10	0	12/2020	Erosion of natural deposits, runoff from orchards, runoff from glass and electronics production wastes
Nitrate ² (ppm)	N	1.2	1.2	10	10	03/2020	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	N	18.16	18.16	N/A	N/A	04/2018	Erosion of natural deposits
Lead & Copper	MCL Violation Y or N	90th Percentile ³	Number of Samples Exceeds AL	AL	ALG		
Copper (ppm)	N	0.075	0	1.3	1.3	06/2018	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	N	<0.0050	0	15	0	06/2018	Corrosion of household plumbing systems; erosion of natural deposits

¹ **Arsenic** is a mineral known to cause cancer in humans at high concentration and is linked to other health effects, such as skin damage and circulatory problems. If arsenic is less than or equal to the MCL, your drinking water meets EPA's standards. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water, and continues to research the health effects of low levels of arsenic.

² **Nitrate** in drinking water at levels above 10 ppm is a health risk for infants of less than six 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, and detected nitrate levels are above 5 ppm, you should ask advice from your health care provider.

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EPDS # 4: TUNGSTONA RO PLANT POST CHLORINATION

Microbiological (RTCR)	TT Violation Y or N	Number of Positive Samples	Positive Sample(s) Month & Year	MCL	MCLG	Likely Source of Contamination	
E. Coli	N	0	N/A	0	0	Human and animal fecal waste	
Fecal Indicator (coliphage, enterococci and/or E. coli)	N	0	N/A	0	0	Human and animal fecal waste	
	MCL Violation Y or N	Running Annual Average	Range of All Samples (Low-High)			Sample Month & Year	Likely Source of Contamination
Disinfectants				MRDL	MRDLG		
Chlorine/Chloramine (ppm)	N	0.97	0.3-1.7	4	4	12/2020	Water additive used to control microbes
Disinfection By-Products				MCL	MCLG		
Haloacetic Acids (HAA5) (ppb)	N	3.7	3.7	60	N/A	07/2020	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM) (ppb)	N	10.9	10.9	80	N/A	07/2020	Byproduct of drinking water disinfection
Inorganic Chemicals (IOC)							
Arsenic ¹ (ppb)	N	0.8	0-3.3	10	0	12/2020	Erosion of natural deposits, runoff from orchards, runoff from glass and electronics production wastes
Nitrate ² (ppm)	N	Not Detected	<0.2	10	10	03/2020	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	N	17.47	17.49	N/A	N/A	04/2018	Erosion of natural deposits
Volatile Organic Chemicals (VOC)				MCL	MCLG		
(mono) Chlorobenzene (ppb)	N	0.74	0.74	100	100	03/2020	Discharge from chemical and agricultural chemical factories
Lead & Copper		90 th Percentile ³	Samples Exceeding AL	AL	ALG		
Copper (ppm)	N	0.075	0	1.3	1.3	06/2018	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	N	<0.0050	0	15	0	06/2018	Corrosion of household plumbing systems; erosion of natural deposits

¹ **Arsenic** is a mineral known to cause cancer in humans at high concentration and is linked to other health effects, such as skin damage and circulatory problems. If arsenic is less than or equal to the MCL, your drinking water meets EPA's standards. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water, and continues to research the health effects of low levels of arsenic.

² **Nitrate** in drinking water at levels above 10 ppm is a health risk for infants of less than six 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, and detected nitrate levels are above 5 ppm, you should ask advice from your health care provider.

³ **90th Percentile** is the product of the number of samples taken during the monitoring period multiplied by 0.9. The sample concentration in the numbered sample yielded by the concentration is the 90th percentile calculation.