2018 City of Craig Water Quality Report AK2120193

Is my water safe?
We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Do I need to take special precautions?
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. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?
The City of Craig gets its drinking water through a surface water intake located in the North Fork Lake. The lake is approximately nine miles east of Craig.

Source water assessment and its availability
A source water assessment for the City of Craig surface water intake was completed in 2003. Identifying the pathways most likely for surface contamination to reach water intake areas is the first step in determining the water system's risks. These are initially determined by looking at the drainage area contributing overland water flow to a surface water source intake. The entire drainage area is also known as the "drinking water protection area".

The protection area established for surface water sources by the ADEC is usually separated into three zones, limited by the watershed boundary. These zones correspond to the overland-flow distance that water travels to get to the source. The ADEC Drinking Water Protection Program's Technical Advisory Committee developed guidelines for derivation of these zones in 1998.

<u>Definition of Zones:</u>

Zone	Definition
A	Areas within 1000-ft of lakes or streams
B	Areas within 1-mile of lakes or streams
C	The watershed boundary

The protection area for the City of Craig includes each of these Zones.

The City of Craig is a Class A public water system that operates year round. Access to the intake is available via a restricted access gravel road. For Class A public water system assessments, six categories of drinking water contaminants were inventoried. They include:

- Bacteria and viruses
- Nitrates and/or nitrites
- Volatile organic chemicals
- Heavy metals, cyanide, and other inorganic chemicals
- Synthetic Organic Chemicals
- Other Organic Chemicals

Vulnerability of a drinking water source to contamination is a combination of two factors:

- Surface water susceptibility
- Contaminant risks

A score for the Surface Water Susceptibility of the source is reached by considering the properties of the water intake and the surrounding area. A ranking is assigned for the surface water susceptibility according to the point score:

- Susceptibility of the Surface Water Source-always considered to be "high" (30 points)

+

- Adequate construction of the intake (0-5 points)

+

- Runoff potential within Zone B (0-5 points)

+

- Dilution capacity of the surface water (0-10 points)

=

Natural Susceptibility (0-50 points)

Surface water source susceptibility according to the point score:

- 40 to 50 pts Very High
- 30 to < 40 pts High

<u>Susceptibility of the City of Craig Water Source:</u>

	Score	Rating
❖ Minimum Allowable Susceptibility	30	
❖ Intake construction adequate	0	
❖ Runoff potential	5	
❖ Dilution capacity	15	
• Overall susceptibility	50	**Very High**

Note: Though the dilution capacity of the surface water scoring criteria is (0-10), the increase susceptibility is based on two factors: River or stream discharge flow in cubic feet per second, and lake or pond Area. Flow for the North Fork Dam is < 20,000 cfs, 10 pts. Lake Area ≤ 1 square mile, 5 pts. ADEC has been contacted for further clarification.

For contaminants, risks to a drinking water source depend on the type, number or density, and distribution of the contaminant sources. The Contaminant Risk score has been derived from an examination of existing, and historical contamination sources that have been detected in the protection area through routine sampling. It also evaluates potential sources of contamination.

City of Craig Contaminant Risks:

Category:	Score	Rating
• Bacteria and viruses	30	High
• Nitrates and/or nitrites	31	High
• Volatile organic chemicals	7	Medium
• Heavy metals, cyanide, and other inorganic chemicals	7	Low
• Synthetic Organic Chemicals	0	Low
• Other Organic Chemicals	7	Low

An overall vulnerability score is assigned for each contaminant type by combining each of the contaminant risk scores with the susceptibility score.

- Susceptibility of the Surface Water Source (0-50 points)

+

- Contaminant Risks (0-50 points)

=

Vulnerability of the Drinking Water Source to Contamination (0-100 points)

Overall Vulnerability Ratings:

- 80 to 100 pts Very High
- 60 to < 80 pts High
- 40 to <60 pts Medium
- < 40 pts Low

City of Craig Overall Vulnerability: Note: scores are rounded off to the nearest five.

Category	Score	Rating
• Bacteria and viruses	80	**Very High**
• Nitrates and/or nitrites	80	**Very High**
• Volatile organic chemicals	55	**Medium**
• Heavy metals, cyanide, and other inorganic chemicals	55	**Medium**
• Synthetic Organic Chemicals	50	**Medium**
• Other Organic Chemicals	55	**Medium**

Bacteria and Viruses:

Coliforms are found naturally in the environment and although they aren't necessarily a health threat, they are an indicator of other potentially harmful bacteria. The contaminant risk for bacteria and viruses is "High "due to positive coliform detection in Raw Water samples. After combining the contaminant risk for bacteria and viruses with the natural susceptibility of the source, the overall vulnerability of the source to bacteria and virus contamination becomes **"very high".**

Nitrates and Nitrites:

The contaminant risk for nitrates and nitrites is "high" with the proximity of the source water to potential beaver habitat and a gravel road posing the most significant contaminant risks to this source of public drinking water. After combining the contaminant risk for nitrates and nitrites with the natural susceptibility of the source, the overall vulnerability to contamination becomes **"very high".**

Volatile Organic Chemicals:
A possible source of volatile organic chemicals in the protection area is the gravel access road. After combining the contaminant risk for Volatile Organic Chemicals with the natural susceptibility of the source, the overall vulnerability to contamination becomes **"Medium"**.

Heavy Metals, Cyanide, and Other Inorganic Chemicals:
The most common source of these chemicals is the infrastructure of the distribution system following treatment process and not from the source waters; although another possible source of these chemicals in the protection area is the gravel road. After combining the contaminant risk for Heavy Metals, Cyanide, and Other Inorganic Chemicals with the natural susceptibility of the source, the overall vulnerability to contamination becomes **"Medium"**.

Synthetic Organic Chemicals:
The contaminant risk for synthetic organic chemicals is "low". After combining the contaminant risk for Synthetic Organic Chemicals with the natural susceptibility of the source, the overall vulnerability to contamination becomes **"Medium"**.

Other Organic Chemicals:
The contaminant risk for other organic chemicals is "low". Gravel roads are a possible source of these chemicals. After combining the contaminant risk with the natural susceptibility of the source, the overall vulnerability to other organic chemicals of the source is **"Medium"**.

For further information regarding this source water assessment please contact the Craig Public Works Department, or the Alaska Resources Library & Information Services (ARLIS) located at 3211 Providence Drive, Room 111, Anchorage, Alaska 99508; phone number 907-272-7547. Or you may call Chris Miller at the ADEC Drinking Water Protection Program at 907-269-4791, or 907-269-7549. You may also access the public source water executive summary data at the ADEC website: http://dec.alaska.gov/eh/dw/dwp/complete.aspx.

Why are there contaminants in my drinking water?
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 (EPA) Safe Drinking Water Hotline (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 including:

- 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, which 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 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 can also come from gas stations, urban stormwater 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 that limit the amount of certain contaminants in water provided by public water systems.

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

How can I get involved?
Persons interested in the City of Craig water system can use the contact information in this report to contact us.

Waivers
ADEC has granted us a monitoring waiver for Synthetic Organic Compounds (SOC). We are not required to monitor during the waivered compliance period. We will continue to apply for waiver renewal at the end of each compliance period.

Additional Information for Lead
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. City of Craig 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.

Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Disinfectants & Disinfection By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
Chlorine (as Cl2) (ppm)	4	4	1.01	.11	1.11	2018	No	Water additive used to control microbes
Haloacetic Acids (HAA5) (ppb)	NA	60	46.775	19	75	2018	No	By-product of drinking water chlorination
TTHMs [Total Trihalomethanes] (ppb)	NA	80	61.9	32.9	91.5	2018	No	By-product of drinking water disinfection
Total Organic Carbon (% Removal)	NA	TT	80.86	NA	NA	2018	No	Naturally present in the environment
Inorganic Contaminants								
Barium (ppm)	2	2	.00357	NA	NA	2014	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Mercury [Inorganic] (ppb)	2	2	.459	NA	NA	2014	No	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Nitrate [measured as Nitrogen] (ppm)	10	10	.111	NA	NA	2018	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Radioactive Contaminants								
Radium (combined 226/228) (pCi/L)	0	5	.75	NA	NA	2014	No	Erosion of natural deposits

Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source
Inorganic Contaminants							
Copper - action level at consumer taps (ppm)	1.3	1.3	.0168	2017	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Inorganic Contaminants							
Lead - action level at consumer taps (ppb)	0	15	.81	2017	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Unit Descriptions	
Term	**Definition**
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions	
Term	**Definition**
MCLG	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.
MCL	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.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection 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.
MRDL	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.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

Though the risks to the City of Craig's surface water source are high based on federal standards, the water from your tap is safe to drink. The treated water consistently meets drinking water quality standards. As part of our ongoing efforts to ensure high drinking water quality, the City of Craig is currently working with Alaska Rural Water Association to update the city's Source Water Protection Plan.

For more information please contact:

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