Where does our water come from? continued

Before entering the Fort Richardson Treatment and Distribution System, raw water from Ship Creek flows through a series of bar racks and screens designed to remove large debris that can damage the treatment facility. The plant uses a series of conventional water treatment processes including coagulation (causes contaminants to clump together), flocculation (increases the size of the clumps), sedimentation (settles the clumps from the water), rapid sand filtration (removes smaller particles and contaminants), and chlorination (disinfects the treated water). The plant is designed to produce approximately 7 million gallons of water per day – enough to fill over 8 Olympic competition-size pools! All of our treatment processes are controlled and monitored by an interconnected set of computers known as a Supervisory Control and Data Acquisition (SCADA) system. This SCADA system constantly monitors the treatment and distribution system and alerts the system operators in the unlikely event of a process disruption or malfunction. Additionally, the SCADA system operates three groundwater wells used to supplement the system during times of peak demand (such as early morning and evening when people are cooking or conducting personal hygiene activities). Because groundwater is a very high quality source of raw water, the only treatment necessary is disinfection. Each well is equipped with its own in-line chlorination equipment to ensure that water enters the distribution system free from any microbial contamination. The finished water is tested several times a day to ensure that pH and chlorine residuals are at appropriate levels.

The treatment process is fairly simple. Before entering the distribution system, the additional well water is chlorinated. The Alaska Department of Environmental Conservation has completed assessments of Fort Richardson's source waters. If you would like to review the Source Water Assessment for Fort Richardson, please contact Kathleen Hook at 907-455-1540.

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Source Water Assessment

For the last several years, the ADEC has been working on assessments of the vulnerability of the water sources that provide water to all of the public water systems in Alaska. The source water assessment for Fort Richardson Water Treatment Plant has been completed and is available for review by contacting Kathleen Hook at 907-455-1540. These tables are from the Executive Summary of our assessment:

	Water System Vulnerability Rating					
Source Intake	Bacteria/ Viruses	Nitrates/ Viruses	Volatile Organic Chemicals	Heavy Metals	Other Organic Chemicals	Synthetic Organic Chemicals
Well #1	Low	Low	Low	Low	Low	Medium
Well #2	Low	Low	Low	Low	Low	Medium
Well #3	Medium	Medium	Medium	Medium	Medium	Medium

Source Water Assessment Report Executive Summary Data – PWSID# AK2212039.

Sampling Schedule Required by the State of Alaska

Analyte	Frequency	# Samples
Treatment Facility		
Cloriform, Total	Monthly	7
HAA5	Quarterly	1
TTHM	Quarterly	1
TOC & ALKY Raw Water	Monthly	1
Lead & Copper	Every 6 Months	20
Wells		
Pesticides Phase 2&5	Quarterly	1
Rad, GA & Uranium	Quarterly	1
Arsenic - Single	Yearly	1
Nitrate - Single	Yearly	1
VOC P2/P5 W/VCL	Every 3 Years	1
Inorganic Phase 5	Every 3 years	1
Inorganic Phase 2	Every 9 years	1
Primary Well		
Total Organic Carbon	Monthly	1
Abestos - Single	Every 3 Years	1

DISCLAIMER: Information provided on this page is automatically generated from a database of Source Water Assessment information. For additional details, please view the actual Executive Summary contained in the Source Water Assessment Report.

DOYON UTILITIES LLC

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Drinking Water Quality
Fort Richardson Alaska

First Annual Water Quality Report • June 2009

Letter from the Site Manager

Bob Zacharski, Doyon Utilities Fort Richardson Site Manager

As a water provider, we are required to send out yearly water quality reports, informing you about the quality of the water you use on a daily basis. I would also like to take this opportunity to introduce you to our company, Doyon Utilities. Doyon Utilities took over the ownership, operations and maintenance of the water, wastewater, electric and natural gas distribution systems at Fort Richardson in August of 2008. The purchase of these utilities was part of the government's move towards privatization of utilities throughout installations across the United States.

> . . . our water quality has met or exceeded all public drinking water standards established by the United States Environmental Protection Agency and the Alaska Department of Environmental Conservation.

Foremost in my message to you this year is that our water quality has met or exceeded all public drinking water standards established by the United States Environmental Protection Agency and the Alaska Department of Environmental Conservation. I am happy to report that we have experienced no water quality violations. Please see the water quality report inside for a detailed analysis of the past year's results. Based upon the information summarized in this report, you can have total confidence in the quality of water you consume.

Since we took ownership in August of 2008, Doyon Utilities has made capital investments of over $15.5 million at Fort Richardson. Capital investments include, among other things, upgrades and new plant. It is important to note that Doyon Utilities has reinvested every dollar we have earned thus far back into strengthening the utility and will continue to do so in the foreseeable future. The following are projects that have either already taken place or are in the planning and engineering stage that will have a positive impact on your quality of life.

Utility projects that affect you

- Residential water, electric and natural gas meters are in the process of being installed. These meters are state-of-the-art and use a technology that allows wireless automatic readings. When these meters go live, we will be able to identify leaks in the system as well as excess energy consumption, allowing Fort Richardson to cut down on energy consumption ultimately saving the Army money.
- We are installing back flow preventers at the golf course. The back flow preventers will prevent the possibility of untreated irrigation water flowing back into the potable water lines and contaminating your drinking water.
- A project to replace the master valve and install various pieces of equipment at the water treatment plant will take place this summer. Not only will this work remedy an internal safety issue but will improve efficiencies and will directly contribute to higher water quality and consistency in meeting the water treatment regulations.
- The natural gas distribution system is being upgraded. This upgrade will resolve some potential safety issues with the system and will prevent future accidents.

Please note that the above projects are just a portion of what we have embarked on. If you have any questions about our projects, please feel free to call my office at 907-338-3600.

Where does our water come from?

Fort Richardson's drinking water is obtained primarily from the Upper Ship Creek Drainage Area in the Ship Creek Watershed. Because the drainage area is contained within the Chugach State Park, it is protected from many chemicals (such as pesticides) that may be found in other surface water sources. While the chemical properties of the raw (untreated) water are not assessed, the Fort Richardson treatment plant routinely examines the physical quality of the raw water, including pH, turbidity, hardness, color and alkalinity. Additional water is obtained from three groundwater wells located on post.

continued on back

Drinking Water Quality Report

Doyon Utilities is proud of the high quality water it provides to our customers. This annual water quality report provides information on the source of our water, lists the results of water quality tests that are conducted and contains other important information about water and health.

Doyon Utilities will notify you immediately if there is any reason for concern about your water. We are happy to report to you how we have surpassed established water quality standards. Doyon Utilities is in compliance with the national primary drinking water regulations and has met all testing and monitoring requirements. The EPA has determined that your water is safe at the tested and monitored levels. We have included a table inside outlining the tests conducted and the results of those tests.

We are proud to report that the water provided by Doyon Utilities meets or exceeds established water quality standards.

Water Testing and Your Health

The sources of drinking water (both tap and bottled) include rivers, lakes, ponds, reservoirs, springs and wells. As water travels over the surface of the land or underground, it can dissolve naturally occurring minerals. In some cases, water can pick up radioactive material, or substances resulting from the presence of animals or human activity. Although our water supply may contain some of these contaminants, it is important to know that these substances are either removed completely or reduced to a safe level before it arrives at your tap.

Contaminants that may be present in source water include:

- **Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment facilities, septic systems, agricultural livestock operations and wildlife.
- **Inorganic Contaminants**, such as salts and metals, which may naturally occur or result from urban storm water runoff, industrial or domestic wastewater discharge, oil and gas production or farming.
- **Pesticides and Herbicides**, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- **Organic Contaminants,** including synthetic and volatile organic compounds, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban storm water runoff and septic systems.
- **Radioactive Contaminants**, which may occur naturally or result from oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the 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. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than is the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons 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/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline (800-426-4791).

We're happy to answer any other questions about Doyon Utilities and our water quality. For general information or for water quality questions call our site management office at 907-338-3600. Other Resources:

Environmental Protection Agency's Safe Drinking Water Hotline: 1-800-426-4791.

Water Quality Data for community water systems throughout the United States is available at www.waterdata.com.

Terms and Abbreviations Used

Action Level (AL): The concentration of a contaminant which, when exceeded, triggers treatment or other requirements which 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 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.

Nephelometric Turbidity Units (NTU): The unit of measurement for turbidity samples.

Not Applicable (NA): When NA is used in the range column, only one sample was taken, therefore, no range exists.

Not Detectable (ND): The contaminant is below the detectable limits of the testing method.

PIC/L: Picocuries per liter.

ppb: Parts per billion or micrograms per liter.

ppm: Parts per million or milligrams per liter.

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

Lead/Copper in Drinking Water

The EPA Safe Drinking Water Act requires public water systems to test water samples from its customers to determine lead and copper levels. If present, elevated levels of lead can cause serious health problems, especially in pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. There is nothing in the treatment process that would introduce lead into the water; therefore, Doyon Utilities tests the water at the individual service locations. If abnormal levels of lead or copper are detected in the water supply, Doyon Utilities will notify the residents and implement action to correct the problem. One method to minimize the risk of lead or copper contamination is to let the tap water run for 30 seconds to 2 minutes to flush any water that has been sitting for several hours. It is important to use this approach for drinking water or cooking water. 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.

What's Really 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 the 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 at 1-800-426-4791.

The table lists the Regulated Contaminants required to be monitored by the EPA that were detected in your water. While most monitoring is required annually, some contaminants are sampled less frequently. The Interim Enhanced Surface Water Treatment Rule required testing for trihalomethanes and haloacetic acids at the farthest end of the distribution system or any part of the system that retains water the farthest from the water treatment facility. This sampling was done quarterly in 2008. All the substances we found were present in quantities less than the EPA's limits for safe drinking water. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. If you would like to view a complete listing of test results, please call Kathleen Hook at 907-455-1540.

In addition to those samples collected by the DPW Environmental Compliance group, Preventative Medicine also collects a variety of 'quality control' samples to help ensure the overall safety of the post's drinking water. Combined, these two groups have conducted over 1,250 tests for more than 100 substances in your drinking water system during 2008.

Fort Richardson experienced one monitoring violation during 2008. This violation was the result of failing to collect an alkalinity sample during July. Based upon past sample results and the results of the new samples there is no basis to believe that any exceedence of the MCL occurred.

The table at right shows analyses that the State of Alaska requires us to sample our treatment facility. Please note the frequency and number of samples varies on each constituent.

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Contamination	Sample Date	Violation Y/N	Level Detected	MCLG	MCL	Likely Source of Contamination	Health Effects
The following violations occurred in 2008							
Alkalinity	7/08	Y		10	10	Per the Surface Water Treatment Rule we are required to test monthly for Alkalinity. A sample was not taken for the month of July.	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
The following constituents were detected in low levels. Fort Richardson is required to test for these analyses daily.							
Turbidity	Daily 2008	N	0.0 NTU 100%	0	TT=1 NTU TT= % of samples <0.5 NTU	Soil Run-off	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms.
Fluoride	Daily 2008	N	1.1-1.8 ppm	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. Additive to promote strong teeth.	Water additive which promotes strong teeth. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling also known as dental fluorosis, may include brown staining and/or pitting of the teeth. and occurs only in developing teeth before they erupt from the gums.
The following constituents were detected in low levels. Fort Richardson is required to test for these analyses monthly.							
Total Organic Carbon (TOC)	Monthly 2008	N	Raw Water Range 0.0-4.4 ppm[1] No removal required if <2.0 Treated Water Range 0.0-2.1 ppm	NA	TT	Naturally present in the environment	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver, or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
[1]45.0% removal is required if TOC >4.0, but <8.0, when alkalinity is <60 mg/L CaCO3. Actual removal for the Ft. Richardson WTP was 52.3%.							
The following constituents were detected in low levels. Fort Richardson is required to test for these analyses quarterly.							
Total Trihalomethanes	Quarterly 2008	N	14.5 ppb running annual average	NA	80	By-product of drinking water chlorination	Some people who drink water, containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
Total Haloacetic Acids	Quarterly 2008	N	9.78 ppb running annual average	NA	60	By-product of drinking water disinfection	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
The following constituents were detected in low levels. Fort Richardson is required to test for these analyses annually.							
Nitrate	1/22/08 Well 1 Well 2 Well 3 Well 4 3/13/08 Well 1	N	 0.257 ppm 0.595 ppm 0.626 ppm 0.549 ppm 0.248 ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
The following constituents were detected in low levels. Fort Richardson is required to test for these analyses every three years.							
Lead[2]	12/15/08	N	0.65-18.3 ppb 90% = 17.6 ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
Copper[2]	12/15/08	N	90% = 0.200 ppm	1.3	AL=1.3	Corrosion of household plumbing system	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
Arsenic	6/5/08	N	0.608 ppb highest level reported	NA	10	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
Chromium	6/5/08	N	0.747 ppb highest level reported	100	100	Discharge from steel and pulp mills; Erosion of natural deposits	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
[2]Fort Richardson conducted their residential copper and lead testing at the housing units. A total of 20 samples were collected from each branch line of the distribution system. All results were below MCLs.							
The following constituents were detected in low levels. Fort Richardson's next sampling event is be determined by the ADEC.							
Radium, Combined	11/27/07	N	0.74 PIC/L Highest level reported	0	5	Erosion of natural deposits	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.