

LANDLORDS

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ORIENT WATER COMPANY

Public Water System #64300 U – Orient, Washington

2016 Consumer Confidence Report

This annual report is designed for consumers of drinking water within the Orient Water Company Water System (OWC), and provides information about the quality, source, and potential health effects of contaminants in our local and source water systems. This report conforms to the Federal regulation, contained within the Safe Drinking Water Act, which requires that this information be provided annually. This report contains a summary of the water quality test results from the OWC source water and distribution system. The data contained in this report was collected during or prior to 2015.

DEFINITIONS

The following definitions may be used in this report:

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 – *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.)

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

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

mg/L – *milligrams per liter* (This unit is equivalent to measurements in parts per million.)

ug/L – *micrograms per liter* (This unit is equivalent to measurements in parts per billion.)

pCi/L – *picoCuries per liter* (A measurement of radioactivity.)

SOURCE WATER

The source water for OWC is supplied by Deer Creek, which flows east into the Kettle River. A weir collects the water from the creek, where it is transferred through a pipeline for approximately one mile to the water treatment plant west of town. Water is filtered with a slow sand bed before being treated with chlorine for a minimum of six hours to meet water quality measures. Treated water is stored in a 40,000 gallon reservoir before being delivered to your tap.

Source water tests are mandated by the Washington State Department of Health (DOH) to monitor the quality of the OWC source water. This provides information on the quality of the water that is being pumped from the aquifer. Further information about the OWC source water can be found in the source water assessment, on file with the Department of Health. The assessment evaluates the potential risk of contamination that may be posed by activities or conditions in the area. For a copy of this information, contact Alpine Environmental at the numbers listed at the end of this report.

SOURCE WATER TESTING SUMMARY

The following tests were performed on the OCW source water in or prior to 2015. These samples were collected from a sampling tap at the well, and represent the water served from the source.

Substance Analyzed	Date Collected	Detected Level	MCL	MCLG	Unit of Measure	Passed
Inorganic Chemicals (IOC) – primary contaminants with health effects						
Nitrate	9/13/15	No Detect	10	10	mg/L	Yes
Nitrite	6/29/11	No Detect	1	1	mg/L	Yes
Arsenic	6/29/11	No Detect	10	0	ug/L	Yes
Barium	6/29/11	0.02	2	2	mg/L	Yes
Cadmium	6/29/11	No Detect	5	5	ug/L	Yes
Chromium	6/29/11	No Detect	100	100	ug/L	Yes
Mercury	6/29/11	No Detect	2	2	ug/L	Yes
Selenium	6/29/11	No Detect	50	50	ug/L	Yes
Beryllium	6/29/11	No Detect	4	4	ug/L	Yes
Nickel	6/29/11	No Detect	100	100	ug/L	Yes
Antimony	6/29/11	No Detect	6	6	ug/L	Yes
Thallium	6/29/11	No Detect	2	0.5	ug/L	Yes
Cyanide	6/29/11	No Detect	200	200	ug/L	Yes
Fluoride	6/29/11	0.13	4	4	mg/L	Yes
Asbestos	6/7/15	No Detect	7	7	MFL>10um	Yes
Inorganic Chemicals (IOC) – secondary contaminants with taste, odor, color effects						
Iron	6/29/11	30.4	300	N/A	ug/L	Yes
Manganese	6/29/11	No Detect	50	N/A	ug/L	Yes
Silver	6/29/11	No Detect	100	N/A	ug/L	Yes
Chloride	6/29/11	4.4	250	N/A	mg/L	Yes
Sulfate	6/29/11	3.46	250	N/A	mg/L	Yes
Zinc	6/29/11	No Detect	5	N/A	mg/L	Yes
Hardness	6/29/11	68	N/A	N/A	mg/L	Yes
Volatile Organic Chemicals (VOC) – includes petroleum products and other chemicals						
All VOCs (61 contaminants tested)	7/14/11	No Detect	Varies	Varies	--	Yes

Synthetic Organic Chemicals (SOC) – includes pesticides and herbicides						
All SOCs (85 contaminants tested)	7/1/11	No Detect	Varies	Varies	--	Yes
Radioactivity						
Radium 228	8/16/12	0.29	5	0	pCi/L	Yes
Gross alpha particles	12/19/11	2.13	15	0	pCi/L	Yes
Water Treatment						
Turbidity	Continuous	0.93 (max)	1.0	0	NTU	Yes

WHAT DOES “NO DETECT” MEAN?

Many of the contaminants listed in the results tables show an analytical result of “No Detect.” This does not mean that the contaminant was not present in the water, but that the concentration, if any, was undetectable with the analytical methods used.

DELIVERED WATER

OCW is required to test for contaminants throughout the distribution system. Samples are collected from at least three residences throughout the system to satisfy the DOH sampling recommendations and to best represent the conditions existing in the system. At least one water sample per month is analyzed for the presence of coliform bacteria. In 2015, coliform bacteria

were not detected in any of the twelve samples collected from the system.

Lead and copper testing is typically required every three years, with samples collected from homes throughout the system after the water has stood in the pipes for at least six hours. The table below summarizes the most recent lead and copper sampling results.

Substance Analyzed	Dates Collected	Contaminant Level	AL	MCLG	Unit of Measure	Passed
Lead (313 Louise)	12/19/11	1.52	15	0	ug/L	Yes
Lead (450 Main)	12/19/11	5.89	15	0	ug/L	Yes
Lead (250 3rd)	12/19/11	1.59	15	0	ug/L	Yes
Lead (18 Louise)	12/19/11	2.63	15	0	ug/L	Yes
Lead (10 Blom)	12/19/11	1.58	15	0	ug/L	Yes
Copper (313 Louise)	12/19/11	0.024	1.3	1.3	mg/L	Yes
Copper (450 Main)	12/19/11	0.686	1.3	1.3	mg/L	Yes
Copper (250 3rd)	12/19/11	0.036	1.3	1.3	mg/L	Yes
Copper (18 Louise)	12/19/11	0.087	1.3	1.3	mg/L	Yes
Copper (10 Blom)	12/19/11	0.192	1.3	1.3	mg/L	Yes

Testing also takes place in the distribution system for disinfection by-products (DBPs). These compounds include trihalomethanes (TTHM) and haloacetic acid (HAA), which form in the water lines as chlorine reacts with organic matter in the water. While some studies have suggested a link between DBPs and increased cancer rates, other studies have been inconclusive. The EPA requires water systems that chlorinate to test for DBPs and has set MCLs as a precautionary measure until more is known about DBPs and their effects on human health. Despite the possible risk, chlorination remains the most economical and reliable means of drinking water disinfection. Results of the most recent quarterly DBP testing are summarized in the table below.

Substance Analyzed	Dates Collected	Contaminant Level	MCL	MCLG	Unit of Measure	Passed
TTHM	3/16/15	109	80	0	ug/L	No
HAA	3/16/15	139	60	0	ug/L	No
TTHM	6/7/15	298	80	0	ug/L	No
HAA	6/7/15	353	60	0	ug/L	No
TTHM	9/13/15	113	80	0	ug/L	Yes
HAA	9/13/15	135	60	0	ug/L	No
TTHM	11/2/15	213	80	0	ug/L	No
HAA	11/2/15	156	60	0	ug/L	No

Some contaminants can have serious health implications if they are ingested in high quantities or over long periods of time. The table below provides information on those contaminants with potential health effects that were detected in your drinking water during or prior to 2015. While these contaminants were detected, most were at levels below the allowable limits set by the state, and therefore should not pose a health risk to most individuals. Your doctor can provide more information about any special concerns you may have regarding your drinking water and its effects on your health.

Contaminant	Known or likely source	Potential health effects
Arsenic	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.
Barium	Erosion of natural deposits; discharge from metal refineries; discharge of drilling wastes	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
Copper	Erosion of natural deposits	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.
Fluoride	Erosion of natural deposits; discharge from fertilizer and aluminum factories; 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.
Gross alpha particles	Erosion of natural deposits	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Haloacetic acids (HAA)	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.
Lead	Erosion of natural deposits; corrosion of household plumbing systems	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.
Radium	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.
Trihalomethanes (TTHM)	By-product of drinking water disinfection.	Some people who drink water containing trihalomethanes in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
Turbidity	Soil runoff	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 such as nausea, cramps, diarrhea, and associated headaches.

2015 VIOLATIONS

The following violations were reported during the 2015 operating year:

Treatment Technique Violations – the system failed to adequately chlorinate the water at certain times during the months of April and May.

Maximum Contaminant Level Exceeded – the system exceeded the maximum contaminant levels for disinfection by-products in all four quarters.

Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and

parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

To address these violations, OWC has raised the normal chlorine level to allow more response time when levels decline. However, this causes disinfection by-products to increase, and OWC is in the planning process for system upgrades to address this deficiency.

COMMUNITY INVOLVEMENT

Your involvement in the management of the OWC water system is important to its long-term function. To participate or provide input, contact Elaine Hotchkiss at (509) 684-6527.

This Consumer Confidence Report has been prepared by Alpine Environmental of Tonasket, Washington, serving north central Washington water systems since 2003. As your contract water operator, Alpine Environmental is proud to be providing you with the highest quality of service and oversight available. If you have any questions or comments regarding the information presented in this report, please call Alpine Environmental at (509) 826-1653 or (509) 322-0581.

A MESSAGE FROM THE EPA

Throughout Washington State, 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. At the same time, this water can also pick up substances resulting from the presence of animals or from human activity.

All sources of 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 (EPA) Safe Drinking Water Hotline at 1-800-426-4791. Contaminants that may be present in source water, and that are routinely tested for, 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 may 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 agricultural and residential uses.

RADIOACTIVE CONTAMINANTS, which are naturally-occurring.

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.

In order to ensure that our water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in the water provided by your water system. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Washington State allows some contaminants to be monitored less than once per year because the concentration of these contaminants is not expected to vary significantly from year to year.

Additional Information

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. The EPA and the Center for Disease Control (CDC) provides guidelines on appropriate methods to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants, and this information is available from the EPA Safe Drinking Water Hotline at 1-800-426-4791.

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. Orient Water Company 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 thirty seconds to two minutes before using drinking 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>.

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, you should ask for advice from your health care provider.