

2007 Drinking Water Quality Report



For the Calendar year 2007

We are pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you about the water quality 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 we make to continually improve the water treatment process and protect the Island's water resources. We are committed to ensuring the quality of your water.

Water System Information

Hat Island manages its own water system and is required to be licensed by the State of Washington. As such we are required to have a certified operator responsible for the daily operation of the system. Wayne Orff, our operator in training can be reached at 360-444-6611. Wayne is not yet fully certified. Therefore we must employ a certified Contract Operator. Donovan Sheppard is our certified operator. He can be reached at 360-794-6999. Wayne is currently studying to obtain his certifications, but the process is up to three years in length. Until Wayne becomes fully certified we will be required to employ Donovan. During 2007 Wayne earned his first of three required certifications and is now studying for his second.

Sources of Water

Our water source is six ground water wells and our Reverse Osmosis (RO) Plant. The product of these sources is stored in two concrete storage tanks located on the high points of the Island. Unless your home is in Divisions G or M, the water is then delivered to your homes via a gravity feed distribution system. All six wells are located in the sea level aquifer and are therefore susceptible to salt water intrusion. These wells are pumped and rested to limit saline intrusion and maintain

reservoir levels at or below 250 mg/L Secondary Maximum Contaminant Level. Because of these limited pump runs our wells can only produce an average of around 7,000 gallons per day. The RO plant can produce 30,000 ó 40,000 gallons per day. On a 3 day holiday weekend we can consume over 125,000 gallons of water. This is the reason why we do not have an unlimited water supply on the island and you are asked to conserve.

We have a wellhead protection plan in place to help protect our water sources. This plan ensures that the Island owns and maintains a buffer of properties surrounding each of our 6 wells which allows us to insure that we protect the infiltration zones surrounding each well head. Still Hat Island is a small landform and everything that you put on the ground eventually ends up in our aquifers. That bucket of used engine oil from your island car, the can of old paint in your garage, the unused can of insecticide when poured on the ground all have the potential to migrate into our well water. Also the recharging of our aquifers depends in a very large part on rain water run off. Trees and other vegetation slow the movement of surface water to give it time to soak into the ground and eventually into the aquifers. When you strip your properties of trees and leave only grass you speed runoff and reduce absorption. Our long term water health is in your hands.

If you have any questions about this report or concerning your water utility, please contact Chuck Motson or Wayne Orff at 360-444-6611 during the day. We want our valued customers to be informed about their water utility. If you want to learn more, please visit our community web site. We post the results of all our monthly biological and scheduled quality tests as well as information helpful in understanding how our water system works.

If you have concerns about the quality of our water feel free to attend any of our Board of Trustees meetings which are held on the 3rd Saturday of each month on Hat Island.

Detected Containments and Missed Samples

During 2007 we had two routine tests returned with a positive measurement for Coliform bacteria in our distribution system. Coliform is a naturally occurring bacteria found in soil and is used as a marker bacteria. It is not harmful to humans, but if it is present in our system there might be other bacteria present that are harmful.

On 9/5/2007 we received notification that Coliform was present in our monthly sample. Our investigation revealed a broken feed line from the #3 and #6 wells which possibly allowed soil bacteria to enter the system. It was repaired and

sanitized, and we resampled with clean reports. Less than a month later we again had a sample with Coliform that we believe was still related the line break. We sanitized the entire distribution system, and resampled with clean reports.

Currently the Green Sand Filter which removes iron and manganese from the well water remains off line. The state found it to be inoperable during their 2007 visit and as a result we were instructed to take it off line. The Island's engineers, Gray and Osbourne, are working on an upgraded system, and we currently have a plan at the state for approval and are working with suppliers to upgrade our filtration media. When back on line this will also aid in addressing the arsenic issue discussed below as arsenic has an affinity for iron and this new filtration media will remove more of the iron in our well water and along with it more arsenic.

The 2006 average Arsenic levels in our well water exceeded the EPA's newly published Maximum Contamination Level of 0.010 mg/l. Our 2006 average was 0.0104 mg/l. This puts us in a position to be required to monitor arsenic levels quarterly until we have mitigated the issue. Due to a miscommunication we failed to take the first required quarterly test and we are required to inform you of this oversight. We are now monitoring arsenic quarterly. These higher than acceptable arsenic levels are also requiring us to modify our well water filtration system to remove more arsenic. We have until 2012 to meet the new EPA standards, however we are well on our way to receiving approval for an enhanced system and hope to have it installed and working before the end of the this summer.

Please remember that there has been no change in the amount of arsenic in our well water, rather there are now higher, more stringent standards.

The Board of Directors has approved the creation of a water advisory board made up of island owners. If you have an interest in serving on this committee contact the office.

Results of State Required Sampling

Maximum Contaminants Levels (MCL)s are set at very stringent levels for your protection and are set to limit the probability of anyone suffering an adverse effect from any of the below listed contaminants.

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/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Please call our office at (360) 444 6611 if you have questions. Donovan, Wayne and I will work as hard as necessary to ensure that we have the highest possible water quality and that our distribution system is the safest it can possibly be. We welcome your input.

Hat Island routinely monitors for contaminants in your drinking water according to Federal and State laws. The following table shows the results of our monitoring for the period of January 1st to December 31st, 2007. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily pose a health risk. 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.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Not-Analyzed (NA) ó Not required to be tested this year.

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (picograms/l) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in

water.

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

Million Fibers per Liter (MFL) - million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) - (mandatory language) A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level - (mandatory language) The *Maximum Allowed* (MCL) is 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 - (mandatory language) The *Goal* (MCLG) is 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.

TEST RESULTS						
Contaminant	Violation Y/N	Level Detected	Unit	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants, tested monthly						
1. Total Coliform Bacteria	Y			0	Presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment
Fecal coliform and <i>E.coli</i>	N			0	a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or <i>E. coli</i> positive	Human and animal fecal waste
3. Turbidity	N	0.19		n/a	1.0	Soil runoff
Radioactive Contaminants, Tested in Mar 2007						
Beta/photon emitters	N/A	ND	Mrem/yr	0	4	Decay of natural and man-made deposits
5. Alpha emitters	N/A	ND	PCi/1	2	15	Erosion of natural deposits
6. Combined radium	N/A	ND	PCi/1	0	5	Erosion of natural deposits
Inorganic Contaminants, Tested in Mar 2007						

7. Antimony	N	ND	Ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
8. Arsenic	N	10.4	Ppb	n/a	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
9. Asbestos	N	N/A	MFL	7	7	Decay of asbestos cement water mains; erosion of natural deposits
10. Barium	N	ND	Ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
11. Beryllium	N	ND	Ppb	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
12. Cadmium	N	ND	Ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
13. Chromium	N	ND	Ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
14. Copper	N	ND	Ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
15. Cyanide	N	ND	Ppb	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
16. Fluoride	N	ND	Ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
17. Lead	N	ND	Ppb	0.15	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
18. Mercury (inorganic)	N	ND	Ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
19. Nitrate (as Nitrogen)	N	ND	Ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
20. Nitrite (as Nitrogen)	N	ND	Ppm	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
21. Selenium	N	ND	Ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
22. Thallium	N	ND	Ppb	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories

Synthetic Organic Contaminants including Pesticides and Herbicides, Tested in Mar 2007

23. 2,4-D	N/A		Ppb	70	70	Runoff from herbicide used on row crops
24. 2,4,5-TP (Silvex)	N/A		Ppb	50	50	Residue of banned herbicide
25. Acrylamide	N/A			0	TT	Added to water during sewage/wastewater treatment
26. Alachlor	N/A		Ppb	0	2	Runoff from herbicide used on row crops
27. Atrazine	N/A		Ppb	3	3	Runoff from herbicide used on row crops
28. Benzo(a)pyrene (PAH)	N/A		Nanograms/l	0	200	Leaching from linings of water storage tanks and distribution lines
29. Carbofuran	N/A		Ppb	40	40	Leaching of soil fumigant used on rice and alfalfa
30. Chlordane	N/A		Ppb	0	2	Residue of banned termiticide
31. Dalapon	N/A		Ppb	200	200	Runoff from herbicide used on rights of way
32. Di(2-ethylhexyl) adipate	N/A		Ppb	400	400	Discharge from chemical factories

33. Di(2-ethylhexyl) phthalate	N/A		Ppb	0	6	Discharge from rubber and chemical factories
34. Dibromochloropropane	N/A		Nanograms/l	0	200	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
35. Dinoseb	N/A		Ppb	7	7	Runoff from herbicide used on soybeans and vegetables
36. Diquat	N/A		Ppb	20	20	Runoff from herbicide use
37. Dioxin [2,3,7,8-TCDD]	N/A		Picograms/l	0	30	Emissions from waste incineration and other combustion; discharge from chemical factories
38. Endothall	N/A		Ppb	100	100	Runoff from herbicide use
39. Endrin	N/A		Ppb	2	2	Residue of banned insecticide
40. Epichlorohydrin	N/A			0	TT	Discharge from industrial chemical factories; an impurity of some water treatment chemicals
41. Ethylene dibromide	N/A		Nanograms/l	0	50	Discharge from petroleum refineries
42. Glyphosate	N/A		Ppb	700	700	Runoff from herbicide use
43. Heptachlor	N/A		Nanograms/l	0	400	Residue of banned termiticide
44. Heptachlor epoxide	N/A		Nanograms/l	0	200	Breakdown of heptachlor
45. Hexachlorobenzene	N/A		Ppb	0	1	Discharge from metal refineries and agricultural chemical factories
46. Hexachlorocyclopentadiene	N/A		Ppb	50	50	Discharge from chemical factories
47. Lindane	N/A		Nanograms/l	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens
48. Methoxychlor	N/A		Ppb	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
49. Oxamyl [Vydate]	N/A		Ppb	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
50. PCBs [Polychlorinated biphenyls]	N/A		Nanograms/l	0	500	Runoff from landfills; discharge of waste chemicals
51. Pentachlorophenol	N/A		Ppb	0	1	Discharge from wood preserving factories
52. Picloram	N/A		Ppb	500	500	Herbicide runoff
53. Simazine	N/A		Ppb	4	4	Herbicide runoff
54. Toxaphene	N/A		Ppb	0	3	Runoff/leaching from insecticide used on cotton and cattle
Volatile Organic Contaminants, Tested in Mar 2007						
55. Benzene	N	ND	Ppb	0	5	Discharge from factories; leaching from gas storage tanks and landfills
56. Carbon tetrachloride	N	ND	Ppb	0	5	Discharge from chemical plants and other industrial activities
57. Chlorobenzene	N	ND	Ppb	100	100	Discharge from chemical and agricultural chemical factories
58. o-Dichlorobenzene	N	ND	Ppb	600	600	Discharge from industrial chemical factories
59. p-Dichlorobenzene	N	ND	Ppb	75	75	Discharge from industrial chemical factories
60. 1,2 - Dichloroethane	N	ND	Ppb	0	5	Discharge from industrial chemical factories
61. 1,1 - Dichloroethylene	N	ND	Ppb	7	7	Discharge from industrial chemical factories

62. cis-1,2-ichloroethylene	N	ND	Ppb	70	70	Discharge from industrial chemical factories
63. trans - 1,2 - Dichloroethylene	N	ND	Ppb	100	100	Discharge from industrial chemical factories
64. Dichloromethane	N	ND	Ppb	0	5	Discharge from pharmaceutical and chemical factories
65. 1,2-Dichloropropane	N	ND	Ppb	0	5	Discharge from industrial chemical factories
66. Ethylbenzene	N	ND	Ppb	700	700	Discharge from petroleum refineries
67. Styrene	N	ND	Ppb	100	100	Discharge from rubber and plastic factories; leaching from landfills
68. Tetrachloroethylene	N	ND	Ppb	0	5	Leaching from PVC pipes; discharge from factories and dry cleaners
69. 1,2,4 - Trichlorobenzene	N	ND	Ppb	70	70	Discharge from textile-finishing factories
70. 1,1,1 - Trichloroethane	N	ND	Ppb	200	200	Discharge from metal degreasing sites and other factories
71. 1,1,2 -Trichloroethane	N	ND	Ppb	3	5	Discharge from industrial chemical factories
72. Trichloroethylene	N	ND	Ppb	0	5	Discharge from metal degreasing sites and other factories
73. TTHM [Total trihalomethanes]	N	ND	Ppb	0	100	By-product of drinking water chlorination
74. Toluene	N	ND	Ppm	1	1	Discharge from petroleum factories
75. Vinyl Chloride	N	ND	Ppb	0	2	Leaching from PVC piping; discharge from plastics factories
76. Xylenes	N	ND	Ppm	10	10	Discharge from petroleum factories; discharge from chemical factories

Please call our office if you have questions.

We at Hat Island work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our fragile water sources, which are the heart of our community, our way of life and our children's future.

Thank You,

Chuck Motson
Island Manager