



IN REPLY REFER TO:

## United States Department of the Interior

NATIONAL PARK SERVICE

Crater Lake National Park

Post Office Box 7

Crater Lake, Oregon 97604

A 90(CRLA)

May 5th, 2006

Memorandum

To: General public, residents and employees of Crater Lake, Oregon.

From: Brian J. Coulter, Utilities Supervisor CRLA

Subject: Annual Consumer Confidence Report for the Annie Springs Water System PWS ID#4101080.

In response to the congressional amendment of the Safe Drinking Water Act, (August 6, 1996) all public water systems must prepare and provide customers an annual Consumer Confidence Report.

This report is designed to inform you about the quality of the water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. Our water source is source named "Annie Springs". It is located in the park and is the sole source for all potable water except for the Lost Creek Campground.

The National Park Service employees who operate and maintain this system are Oregon State Public Health certified in water treatment and distribution. This water system is inspected annually by a United States Public Health Consultant. Water chemical analyses and bacteriological sampling is tested by an Oregon State certified laboratory.

**Annie Springs** is routinely monitored for contaminants in your drinking water according to Federal and State laws. This table shows the results of our required monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2005.

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

*Non-Detects (ND)* - laboratory analysis indicates that the constituent is not present or are present at levels less than the test can measure.

*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)* - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

*Maximum Contaminant Level* - 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. MCL’s are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

*Maximum Contaminant Level Goal* - 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 Measurement	MCLG	MCL	Likely Source of Contamination
<b>Microbiological Contaminants</b>						
1. Total Coliform Bacteria <b>(62 Samples taken)</b>	NO	0	Positive sample	0	presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment
2. Fecal coliform and <i>E.coli</i> <b>(0 Samples taken)</b>	NO	0	Positive sample	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	NA			N/A	TT	Soil runoff

<b>Radioactive Contaminants</b>						
4. Beta/photon emitters	NA		mrem/yr	0	4	Decay of natural and man-made deposits
5. Alpha emitters	NA		pCi/l	0	15	Erosion of natural deposits
6. Combined radium	NA		pCi/l	0	5	Erosion of natural deposits
<b>Inorganic Contaminants</b>						
7. Antimony	No	1	Ppb	6	0.006	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
8. Arsenic	No	ND	Ppb	0.003	0.050	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
9. Asbestos	NA		MFL	7	7	Decay of asbestos cement water mains; erosion of natural deposits
10. Barium	No	.0016	Ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
11. Beryllium	No	.02	Ppb	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
12. Cadmium	No	1	Ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
13. Chromium	No	20	Ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
14. Copper	NA		Ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
15. Cyanide	No	20	Ppb	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
16. Fluoride	No	.1	Ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
17. Lead	No	2	Ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
18. Mercury (inorganic)	No	1	Ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
19. Nitrate (as Nitrogen)	No	ND	Ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
20. Nitrite (as Nitrogen)	No	ND	Ppm	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
21. Selenium	No	3	Ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
22. Thallium	No	1	Ppb	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
<b>Synthetic Organic Contaminants including Pesticides and Herbicides</b>						
23. 2,4-D	No	.02	Ppb	70	70	Runoff from herbicide used on row crops
24. 2,4,5-TP (Silvex)	No	.04	Ppb	50	50	Residue of banned herbicide
25. Acrylamide	No			0	TT	Added to water during sewage/wastewater treatment
26. Alachlor	No	.04	Ppb	0	2	Runoff from herbicide used on row crops
27. Atrazine	No	.02	Ppb	3	3	Runoff from herbicide used on row crops

28. Benzo(a)pyrene (PAH)	No	40	Nanograms/l	0	200	Leaching from linings of water storage tanks and distribution lines
29. Carbofuran	No	1	Ppb	40	40	Leaching of soil fumigant used on rice and alfalfa
30. Chlordane	No	.04	Ppb	0	2	Residue of banned termiticide
31. Dalapon	No	2	Ppb	200	200	Runoff from herbicide used on rights of way
32. Di(2-ethylhexyl) adipate	NA		Ppb	400	400	Discharge from chemical factories
33. Di(2-ethylhexyl) phthalate	NA		Ppb	0	6	Discharge from rubber and chemical factories
34. Dibromochloropropane	No	20	Nanograms/l	0	200	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
35. Dinoseb	No	.04	Ppb	7	7	Runoff from herbicide used on soybeans and vegetables
36. Diquat	NO	.04	Ppb	20	20	Runoff from herbicide use
37. Dioxin [2,3,7,8-TCDD]	NA		Picograms/l	0	30	Emissions from waste incineration and other combustion; discharge from chemical factories
38. Endothall	No	10	Ppb	100	100	Runoff from herbicide use
39. Endrin	No	.02	Ppb	2	2	Residue of banned insecticide
40. Epichlorohydrin	NA			0	TT	Discharge from industrial chemical factories; an impurity of some water treatment chemicals
41. Ethylene dibromide	No	10	Nanograms/l	0	50	Discharge from petroleum refineries
42. Glyphosate	No	10	Ppb	700	700	Runoff from herbicide use
43. Heptachlor	No	40	Nanograms/l	0	400	Residue of banned termiticide
44. Heptachlor epoxide	No	20	Nanograms/l	0	200	Breakdown of heptachlor
45. Hexachlorobenzene	No	.1	Ppb	0	1	Discharge from metal refineries and agricultural chemical factories
46. Hexachlorocyclopentadiene	No	.02	Ppb	50	50	Discharge from chemical factories
47. Lindane	NA		Nanograms/l	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens
48. Methoxychlor	No	.02	Ppb	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
49. Oxamyl [Vydate]	No	.02	Ppb	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
50. PCBs [Polychlorinated biphenyls]	NA		Nanograms/l	0	500	Runoff from landfills; discharge of waste chemicals
51. Pentachlorophenol	NA		Ppb	0	1	Discharge from wood preserving factories
52. Picloram	NA		Ppb	500	500	Herbicide runoff
53. Simazine	NA		Ppb	4	4	Herbicide runoff
54. Toxaphene	NA		Ppb	0	3	Runoff/leaching from insecticide used on cotton and cattle
<b>Volatile Organic Contaminants</b>						
55. Benzene	No	ND	Ppb	0.0005	0.005	Discharge from factories; leaching from gas storage tanks and landfills
56. Carbon tetrachloride	No	ND	Ppb	0.0005	0.005	Discharge from chemical plants and other industrial activities
57. Chlorobenzene	NA		Ppb	100	100	Discharge from chemical and agricultural chemical factories
58. o-Dichlorobenzene	No	ND	Ppb	0.0005	0.6	Discharge from industrial chemical factories
59. p-Dichlorobenzene	No	ND	Ppb	0.0005	0.075	Discharge from industrial chemical factories

60. 1,2 - Dichloroethane	No	ND	Ppb	0.0005	0.005	Discharge from industrial chemical factories
61. 1,1 - Dichloroethylene	No	ND	Ppb	0.0005	0.007	Discharge from industrial chemical factories
62. cis-1,2-ichloroethylene	No	ND	Ppb	0.0005	0.07	Discharge from industrial chemical Factories
63. trans - 1,2 - Dichloroethylene	No	ND	Ppb	0.0005	0.1	Discharge from industrial chemical factories
64. Dichloromethane	No	ND	Ppb	0.0005	0.005	Discharge from pharmaceutical and chemical factories
65. 1,2-Dichloropropane	No	ND	Ppb	0.0005	0.005	Discharge from industrial chemical factories
66. Ethylbenzene	No	ND	Ppb	0.0005	0.7	Discharge from petroleum refineries
67. Styrene	No	ND	Ppb	0.0005	0.1	Discharge from rubber and plastic factories; leaching from landfills
68. Tetrachloroethylene	No	ND	Ppb	0.0005		Leaching from PVC pipes; discharge from factories and dry cleaners
69. 1,2,4 - Trichlorobenzene	No	ND	Ppb	0.0005	0.07	Discharge from textile-finishing factories
70. 1,1,1 - Trichloroethane	No	ND	Ppb	0.0005	0.2	Discharge from metal degreasing sites and other factories
71. 1,1,2 -Trichloroethane	No	ND	Ppb	0.0005	0.005	Discharge from industrial chemical factories
72. Trichloroethylene	No	ND	Ppb	0.0005		Discharge from metal degreasing sites and other factories
73. TTHM [Total trihalomethanes]	NA	ND	Ppb	0.0005		By-product of drinking water chlorination
74. Toluene	No	ND	Ppm	0.0005		Discharge from petroleum factories
75. Vinyl Chloride	No	ND	Ppb	0.0005	0.002	Leaching from PVC piping; discharge from plastics factories
76. Xylenes	No	ND	Ppm	0.0005	10.0	Discharge from petroleum factories; discharge from chemical factories

2. Fecal coliform and <i>E.coli</i> (70 samples tested)	NO	0	Positive sample	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

<b>Trihalomethanes (Disinfection Byproducts)</b>						
2943. Bromodichloromethane	NO	ND@ 0.0002	ppb	0	0.005	By-product of drinking water chlorination
2942. Bromoform	NO	ND@ 0.0001	ppb	0	ND	By-product of drinking water chlorination
2941. Chloroform	NO	ND@ 0.0001	ppb	0	0.0016	By-product of drinking water chlorination
2944. Dibromochloromethane	NO	ND@ 0.0002	ppb	0	ND	By-product of drinking water chlorination
Total Trihalomethanes	NO	ND@ 0.080	ppb	0	0.0021	By-product of drinking water chlorination
<b>Haloacetic Acids (Disinfection Byproducts)</b>						
Cas # 79-11-8 Chloroacetic acid	NO	ND	ppb	0	0.06	By-product of drinking water chlorination
Cas #79-08-3 Bromoacetic acid	NO	ND	ppb	0	0.06	By-product of drinking water chlorination
Cas # 79-43-6 Dichloroacetic acid	NO	ND@ 0.0012	ppb	0	0.06	By-product of drinking water chlorination
Cas # 76-03-9 Trichloroacetic acid	NO	ND	ppb	0	0.06	By-product of drinking water chlorination
Cas # 5589-96-3 Bromochloroacetic acid	NO	ND	ppb	0	-----	By-product of drinking water chlorination
Cas # 631-64-1 Dibromoacetic acid	NO	ND	ppb	0	0.06	By-product of drinking water chlorination
HAA5	NO	ND@ 0.0012	ppb	0	0.06	By-product of drinking water chlorination
<b>Inorganic Contaminants</b>						
19. Nitrate (as Nitrogen)	NO	ND@0. 1	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

### ***Microbiological Contaminants:***

- (1) Total Coliform. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other; potentially-harmful, bacteria may be present.
- (2) Fecal coliform/E.Coli. Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

### ***Disinfection Byproducts:***

While disinfectants are effective in controlling many microorganisms, they react with natural organic and inorganic matter in source water and distribution systems to form DBPs. Results from toxicology studies have shown several DBPs (e.g., bromodichloromethane, bromoform, chloroform, dichloroacetic acid, and bromate) to be carcinogenic in laboratory animals. Other DBPs (e.g., chlorite, bromodichloromethane, and certain haloacetic acids) have also been shown to cause adverse reproductive or developmental effects in laboratory animals. Several epidemiology studies have suggested a weak association between certain cancers (e.g., bladder) or reproductive and developmental effects, and exposure to chlorinated surface water.

### ***Inorganic Contaminants:***

(19) Nitrate. 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.

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. All 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 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 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 1-800-426-4791.

As you can see by the table, our system had no violations and has met or exceeded all Federal and state requirements. Crater Lake National Park is very dedicated in providing top quality drinking water at every tap. Please call our office (541) 594-3031 if you have questions.