



**2005 WATER QUALITY CONSUMER CONFIDENCE REPORT**

**HEADQUARTERS WATER FILTRATION PLANT**



**Public Water System**  
**ID. No. 5210503**

**Date of Report**  
**September 15, 2006**

**Water Treatment Operators**  
**Mike Harris: WTO II**  
**Greg Jackson: WTO II**

Drinking water for the headquarters residential, park support area is derived from the Martin Creek Watershed. The intake consists of a diversion dam with an infiltration galley and two screened settling boxes. The intake is managed by NPS Water Treatment Operators. The source water is then delivered to the Headquarters Filtration Plant via 3 miles of underground water main. The source water is then filtered through two pressure cells. Each cell contains layers of anthracite coal, Monterey sand, pea gravel, 3/4" rock and finally 1 1/2" rock. The final treatment is disinfection prior to been stored in an underground reservoir for coolness.

We test the quality of this water supply for a variety of constituents as required by California State Regulations and the National Park Service (Public Health Service).

**This report includes water quality data through December 31, 2005.**

## Source Water Assessment



**Source: Martin Creek.**  
(Surface water)

Date of Last  
Water Source Assessment: **May, 2003**

A copy of the complete assessment may be viewed at:

DHS Valley District Office  
415 Knollcrest Drive, Suite 110  
Redding, Ca. 96002  
Richard Hinrich, 530.224.4867

or

Lassen VNP Headquarters  
Mineral, Ca. 96063  
Graham A. Dobson, 595.4444  
Extension 5127

The Martin Creek Watershed is located on National Forest Land and is managed by the National Forest Service (NFS). In 2003 the NPS and the Ca. Department of Health Services (DHS) developed a "Drinking Water Source Assessment". The Drinking Water Source Assessment determined that the greatest threat to the source water is "Managed Forest Practices". I have met with NFS representatives and submitted a copy of the "Drinking Water Source Assessment". The Forest Service has been cooperative in their management practices.

The Source Assessment created fixed distance zones in the Martin Creek Watershed. These zones protect the source water supply from possible contamination caused by "Managed Forest Practices".

The following are fixed distances in each zone.

**Zone A:** 400 feet from primary stream boundaries.  
200 feet from tributaries.

**Zone B:** 2,500 foot radius around the intake structure.



**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. The water can also pick up substances resulting from the presence of animal or from human activity.

**CONTAMINANTS THAT MAY BE PRESENT IN SOURCE WATER 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 that 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 that are byproducts of industrial processes and petroleum production. Other sources are gas stations, urban stormwater runoff, agricultural application and septic systems.
- ❖ **Radioactive Contaminants**, which can be naturally-occurring or be the result of oil and gas production and mining activities.

**The following are definitions of some of the terms used in this report:**

**MAXIMUM CONTAMINANT LEVEL (MCL):** The highest and lowest level of a contaminant allowed in drinking water.

**PRIMARY DRINKING WATER STANDARDS:** Includes MCLs for contaminants that effect health, surface water treatment requirements, and the monitoring and reporting requirements for required constituents.

**SECONDARY DRINKING WATER STANDARDS (SDWS):** MCLs for contaminants that affect taste, odor or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

**PUBLIC HEALTH GOAL (PHG):** The level of a contaminant in drinking water below which there is no known or expected risk to health as established by the California Environmental Protection Agency.

**MAXIMUM CONTAMINANT LEVEL GOAL (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health as established by the Federal Environmental Protection Agency.

**MAXIMUM RESIDUAL DISINFECTANT LEVEL (MRDL):** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

**MAXIMUM RESIDUAL DISINFECTANT LEVEL GOAL (MRDLG):** The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the U.S. Environmental Protection Agency.

**TREATMENT TECHNIQUE (TT):** A required process intended to reduce the level of a contaminant in drinking water.

**REGULATORY ACTION LEVEL (LL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**VARIANCES AND EXEMPTIONS:** Department permission to exceed and MCL or not comply with a treatment technique under certain conditions.

**NTU:** Nephelometric Turbidity Unit (a measure of water clarity).

**MG/L:** Milligrams per liter or parts per million.

**UG/L:** Micrograms per liter or parts per billion.

**ND:** Non detectable at testing limit.

**TDS:** Total dissolved solids

**pCi/l:** Picocuries per liter (a measure of radiation)



### Microbiological Water Quality

The Public Health Service (PHS) and California State Department of Health Services (DOHS) Regulations require testing for bacteriological contaminants. Analysis of the raw creek water (2/month) and filtered-untreated water (2/month) is required by the (PHS). Distribution system analysis (Final) is required by the (PHS) and the (DOHS). The sampling is performed regularly to verify that the water is free from coliform bacteria.

The 2005 minimum number of Final tests required per month for this water system, when a coliform bacterium is not present is (2). All analysis is performed at a California State Certified Laboratory. The Headquarters water system complied with drinking water standards for microbiological quality for 12 months during 2005.

\* The Final coliform sample taken on December 19, 2005 returned a \* positive sample for total and E-Coli. On December 22 the system was flushed, disinfected and re-sampled for coliform at three sites including the December 19<sup>th</sup> site. These samples returned as negative for coliform. Three additional Final samples were taken on the following month, all with negative results.

Minimum number of final samples for the presence of coliform bacteria required per year: **24**

Number of final samples for the presence of coliform bacteria conducted during the last year: **30**

Number of final samples, which were found to contain coliform bacteria during the year: **1**

## Individual tap monitoring for lead & copper

Monitoring of individual taps from locations within the water system is performed for lead & copper. This monitoring is done to verify that the delivered water does not contain lead or copper.

### Typical Sources of Contamination

**LEAD:** Internal corrosion of household water plumbing systems; discharges from industrial manufacturing; erosion of natural deposits.

**COPPER:** Internal corruptions of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives.

**This table summarizes the most recent monitoring for these constituents in micrograms per liter (ug/l):**

**Note that both lead and copper samples taken are below the MCL.**

	<b>Date of most recent samples</b>	<b>Number of samples collected</b>	<b>Number of samples required</b>	<b>Level detected 90th percentile (ug/l)</b>	<b>Action level (ug/l)</b>
<b>LEAD ==&gt;</b>	<b>2003</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>15</b>
<b>COPPER ==&gt;</b>	<b>2003</b>	<b>5</b>	<b>5</b>	<b>35</b>	<b>1,300</b>

Another round of lead and copper sampling is scheduled for 2006.

## DISINFECTION BYPRODUCTS TESTING RESULTS

Generally speaking, Disinfection Byproducts are the results of over chlorination. Disinfection byproducts testing of water from individual locations in the distribution system is required by Calif. State regulations. The table below summarizes the most recent sampling for disinfection byproducts.

	<b>Year Tested</b>	<b>Level detected (ppb)</b>	<b>MCL (ppb)</b>	<b>PHG</b>
Trihalomethanes	2004	23	80	none
Haloacetic Acids	2004	29	60	none

## Inorganic Chemical Water Quality

These values are expressed in micrograms per liter (**ug/l**) unless otherwise indicated. Micrograms per liter are equivalent to parts per billion (ppb). The symbol "<" indicates less than. The letters "ND" mean that no detectable level of this chemical was found in the samples taken. Please note that not all sampling is required annually, so in some cases our results are more than one year old.

<b>Inorganic Chemical</b>	<b>Date of Test</b>	<b>Level Detected</b>	<b>MCL (ug/l)</b>	<b>Notes</b>
Aluminum	01/03	ND	1000	
Antimony	01/03	ND	6	
Arsenic	01/03	ND	50	
Asbestos	08/05	ND	7 mfl	
Barium	01/03	3ppb	1000	
Beryllium	01/03	ND	4	
Cadmium	01/03	ND	5	
Chromium	01/03	ND	50	
Cyanide	01/03	ND	200	
Fluoride	08/05	ND mg/l	2 mg/l	MCLG=1mg/l
Iron	01/03	ND	300	
Manganese	01/03	ND	50	
MTBE	08/02	ND	13	
Mercury	01/03	ND	2	
Nickel	01/03	ND	100	
Nitrate	08/05	ND	45 mg/l	
Nitrite	08/05	ND	1 mg/l	
Selenium	01/03	ND	50	
Thallium	01/03	ND	2	MCLG = 0.5
Zinc	01/03	ND	5000	



### Radiological Water Quality

This is the Result of water sample analysis performed to measure radiological constituents. Headquarters water system is in compliance if the level does not exceed 5 Pico Curies per liter (pCi/l). Note: Pico Curies are the units used for the measurement of radiological activity.

#### Results of most recent test for radiological constituents.

<b>Name of constituent</b>	<b>Date of Test</b>	<b>Level Detected</b>	<b>MCL</b>
Gross Alpha	08/05	< 3	15

### General Mineral and Physical Water Quality

The following constituents are not considered a health hazard but are monitored to determine consumer acceptance quality:

<b>Name of constituent</b>	<b>Date of test</b>	<b>Level detected</b>	<b>MCL</b>
Apparent-Color (unfiltered)	10/95	10	15 units
Copper	08/05	ND	1000 ug/l (PHG=170 ug/l)
Odor - Threshold	01/03	ND	5 T.O.N.
MBAS(foaming agents)	01/03	ND	0.5 mg/l
Turbidity	DAILY	0.11 Avg.	.30 NTU
Zinc	10/95	0.014	5000 ug/l
PH	DAILY	7.10 Avg.	

<b>Name of Constituent</b>	<b>Date of Test</b>	<b>Level Detected</b>	<b>Recommended Level</b>	<b>Short Term Upper Level</b>
Total Dissolved solids	01/03	54	500 mg/l	1,500 mg/l
Specific Conductance	DAILY	51 AVG.	900 ohms/cm	2,200 ohms/cm
Chloride	01/03	.49	250 mg/l	600 mg/l
Sulfate	01/03	.90	250 mg/l	600 mg/l
Hardness	01/03	19	none	none
Sodium	01/03	54	1500mg/l	1500mg/l

### **GENERAL INFORMATION ON DRINKING WATER**

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 individuals, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The USEPA/Center for disease control guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline at 1.800.426.4791.

### **ADDITIONAL GENERAL INFORMATION ON DRINKING WATER**

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. The presence of contamination 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 USEPA's Safe Drinking Water Hotline (1-800-426-4791)

## Surface Water Treatment Compliance Information

The highest single daily turbidity measurement for the year was 1.20 NTU, measured in December 2005. Regulations require treated water from the type of filtration system provided at this water system to meet a standard of 0.3 NTU or less, in 95% of the samples taken during the month. The yearly average was 0.11 NTU. The treatment plant met the standard for all months in 2005.

If you have any questions or inquiries in regard to this report, please contact Graham A. Dobson at 595-4444 Ext. 5127.

Prepared by Graham A. Dobson, WTO  
September 15, 2006

