

NAVAL AIR WEAPONS STATION-CHINA LAKE  
WATER SYSTEM PERMIT NO. 1510703

**CONSUMER CONFIDENCE REPORT**  
(Annual Water Quality Report)

Calendar Year 2012

Complied by:

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## NAVAL AIR WEAPONS STATION-CHINA LAKE

### CONSUMER CONFIDENCE REPORT

Calendar Year 2012

The Environmental Management Division (EMD-Code PR241) is pleased to provide you with the annual Consumer Confidence Report for the Naval Air Weapons Station-China Lake. Keeping the employees, contractors, residents, and visitors at NAWS-China Lake informed of our water quality is part of our service. Our goal is to provide to you a safe and dependable supply of drinking water. If you need additional copies of this report, please visit the Environmental Management Division office, located in Building 00981, Room 207, or call Mr. Michael Stoner at 939-3243. If there are other water users at your location (remote facilities, etc.), we recommend you distribute this report to those water users also.

#### **WATER SOURCES**

In the Indian Wells Valley (North Range), drinking water provided by the Station's water distribution system is pumped from six ground water wells located in the Harvey Wellfield (near Inyokern) and Intermediate Wellfield (about 3 miles west of the Main Gate) areas and two small-diameter productions wells located at Baker Tower and Lower Baker Range. Ground water levels range from about 220-260 feet below ground surface in the Harvey and Intermediate wellfields while groundwater levels in the Baker Range area wells range from about 40-60 feet below ground surface. The water is pumped into storage facilities also located in the Harvey Wellfield and Intermediate Wellfield plus additional storage facilities near the "B" Mountain, Armitage Airfield, China Lake Propulsion Laboratory, and Skytop facilities. The Baker Range wells each have one 5,000 gallon storage tank located near the wellheads. All water pumped from subsurface sources is chlorinated at the wellhead and blended throughout the water distribution system. The water quality provided at the tap from the Harvey Wellfield and Intermediate Wellfield wells is considered excellent with all constituents within State and Federal Maximum Contaminant Levels (MCLs). The Baker Range wells exceed Secondary Standards for Total Dissolved Solids

(TDS) so bottled water is provided for employee, contractor, and visitor consumption.

In the Pilot Knob Valley (South Range), drinking water is provided to the facilities by three water wells located near the Gunline Road (Well 24), Sea Site #3, and Sea Site #1 areas. Well 25, also located along the Gunline Road, serves as a backup well for Well 24. Water is produced from subsurface aquifers at a depth of approximately 250 feet below land surface and delivered to adjacent storage tanks. Water is provided to the Superior Valley facility by a ground water well located near the main testing facility. All water is chlorinated at the wellhead and the water quality is considered good with all general mineral constituents within the State and Federal Maximum Contaminant Levels (MCL). Arsenic concentrations in three of the water source wells (Well 24, Well 25, and Sea Site #3 well) in the South Ranges are over the recently-established MCL. Arsenic treatment facilities have been constructed that treat water produced from Well Sea Site #3, Well 24, and Well 25 to concentrations below the MCL. All groundwater produced at those sites are treated using ion-exchange (ferric hydroxide). Weekly arsenic samples are collected from the two arsenic treatment facilities and water currently being served is well below the MCL. Bottled water continues to be served in these areas.

#### **WATER QUALITY TESTING**

Data included in this report includes results for the following constituents: general minerals/general physical constituents, metals, inorganic compounds, volatile and semi-volatile compounds, asbestos, nitrates, microbacteriological (coliform bacteria), arsenic, and the constituents for the Disinfection/Disinfectant Byproducts Monitoring Rule. We are pleased to report that our drinking water meets all Federal and State requirements. The results of this sampling and our water conservation efforts are presented within Tables 1-6 in this report. Table 1 shows the results for inorganic constituents. Table 2 shows the microbiological monitoring results for both the North Range and South Range water distribution systems. Table 3 shows the Arsenic Rule information and results from samples collected from 2004 through 2012, Table 4 depicts the results for miscellaneous water system sampling requirements and Table 5 shows the overall results for general groundwater chemistry from each of the production wells. Finally, Table 6 shows the total water

produced by the month from groundwater production wells at NAWS-China Lake from FY 2007 through FY 2011.

#### **CONTACT FOR QUESTIONS**

We want our customers to be informed about their water. If you have any questions about this report or other questions related to the water system(s) at NAWS-China Lake, please call Mr. Michael Stoner at 939-3243.

#### **DEFINITIONS**

The following definitions are provided so the reader can better understand the many terms and abbreviations included within this report.

##### Maximum Contaminant Level (MCL):

The MCL is the highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

##### 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 are set by the U.S. Environmental Protection Agency.

##### Nephelometric Turbidity Unit (NTU):

Nephelometric turbidity unit is the measure of the clarity of water. Turbidity in excess of 5 NTU is barely noticeable to the average person.

##### Public Health Goal (PHG):

The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

##### Primary Drinking Water Standard (PDWS):

MCLs for contaminants that affect health along with their monitoring, reporting, and water treatment requirements.

##### 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 (ug/l):  
One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per Liter (pCi/L):  
Picocuries per liter is a measure of the radioactivity in water.

#### **NO FEDERAL OR STATE VIOLATIONS**

As you can see in Table 1 through Table 5, with the exception of the Baker area wells (TDS) and South Range arsenic results, the NAWS-China Lake water system is well within the standards set by all Federal and State regulatory agencies. Natural groundwater in the areas of South Range Wells 24, 25, and Sea Site #3 have arsenic concentrations above the MCL, however, groundwater produced from those three wells with elevated arsenic concentrations are currently being treated to serve water below the Maximum Contaminant Level (MCL) of 10 ppb.

#### **HEALTH RISK QUESTIONS**

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of the contaminants does not necessarily indicate that the water poses a health risk. More information about the contaminants and their potential health risk 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 transplant, 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 their drinking water from their health-care providers. The U.S. Environmental Protection Agency-Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are also available from the Safe Drinking Water Hotline (1-800-426-4791).

## **EDUCATIONAL INFORMATION**

The sources of drinking water (both tap and bottled water) in the State of California include rivers, lakes, streams, ponds, reservoirs, springs, wastewater plants, 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, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water before it is treated include the following:

**Microbial Contaminants:** Viruses and bacteria, which may come from sewage treatment.

**Inorganic Contaminants:** Salts and metals, which can be naturally-occurring or result from urban storm water.

**Pesticides and Herbicides:** May come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

**Organic Chemicals:** Including synthetic and volatile organic chemicals, which are products of industrial processes and petroleum production, and can, also come from gas stations, urban storm water runoff, agricultural application, and septic systems.

**Radioactive Contaminants:** Can be naturally-occurring or be the result of oil and gas production and mining activities.

## **SOURCE WATER ASSESSMENT**

We have completed our Source Water Assessment required by the State-Department of Public Health. The Source Water Assessment is required by the State and assesses our production well sites and their vulnerability to Possible Contaminating Activities (PCAs). Generally, the only PCAs within a one-mile radius of our water sources (production wells) are down-gradient sewer collection ponds in Inyokern, limited septic systems in Inyokern and China Lake Acres, the Indian Wells Valley Airport, low and high density housing in Inyokern and China Lake Acres, and historic/present day gas stations. Due to the nature of our

aquifer system (mainly due to natural hydrogeologic characteristics and depth to ground water) in our production wellfields, there should be little concern for surface contaminants to reach our groundwater sources.

#### **WATER CONSERVATION**

Groundwater is the sole source of drinking water in the Indian Wells Valley and is considered a finite resource. Each employee, contractor, resident, and visitor should practice water conservation techniques in their workplace and at home. Naval Air Weapons Station Instruction #11300.2C is the current Navy water conservation policy at China Lake. Also, the Navy and other signatories of the Indian Wells Valley Cooperative Groundwater Management Committee have compiled various water conservation techniques in their Water Conservation Policy. The Water Conservation Policy is posted at [www.iwvgroundwater.org](http://www.iwvgroundwater.org).

NAWS-China Lake (Public Works-Water Utilities Branch) recently completed the first phase of a two-phase irrigation project that focuses on water conservation through system replacements (ie., improved irrigation piping/sprinkler design), irrigation controllers, and replacing grass with low water-use plants. The irrigation system replacements uses modern system best-design practices to replace old, outdated, and failing systems. The Navy's goal of 20% water savings from FY2007-FY2009 was aggressive but was achieved with the help of everybody. The water-use graphs in Table 6 reflect the water savings since FY2007 due to the achievements of the Public Works Department and water conservation practices of the employees, contractors, and residents of the Station.

#### **CONCLUSIONS**

The water supply served at NAWS-China Lake meets all Federal and State drinking water standards. We also test our water at recommended intervals and report to the California Department of Public Health on a monthly basis. In our efforts to supply good water quality, it is necessary to make continual improvements in the water distribution system. During the past few years, we have drilled one new production well (Well 24), set Well 18 to a "Stand-By" status, upgraded three water production well sites, installed seven pump control valves in the Intermediate/FH Pumping Stations, re-roofed the "B" Mountain reservoir, replaced several miles of water main pipelines from the Intermediate Wellfield to the FH

Reservoir area, and performed other upgrades as necessary. We have addressed the Arsenic Rule with the installation of two granular ferric hydroxide treatment facilities for Wells 24, 25 and Sea Site 3 in the Pilot Knob Valley (all well sites are under the same Water Permit). This project assures that water served to the customers in those areas will have arsenic concentrations in their drinking water of less than 10 ppb (MCL).

Also, many of our customers have voiced a concern about the gasoline additive "MTBE" (Methyl tert-Butyl Ether) which was featured on "60 Minutes" and has been prevalent in the news media as a ground water contaminant. EMD shares this concern and has sampled all production wells in the North and South Ranges for this contaminant. We are pleased to report that all MTBE sampling results are well below the MCL.

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Attachment 1

CCR Posting

Copies of the 2012 CCR for the Naval Air Weapons Station-China Lake were posted on an "All-Hands" message (electronic mail) and hardcopies were distributed to the following locations:

Housing Office  
Training Center  
Michelson Laboratory  
Administration Building  
Armitage Airfield (Air Terminal)  
Visitor Center

The CCR will also be posted on the NAWS-China Lake public website at [www.cnrc.navy.mil/chinalake/](http://www.cnrc.navy.mil/chinalake/)



**TABLE 1**  
**NAWS-CHINA LAKE**  
**2012 WATER SAMPLING RESULTS**

<b>INORGANIC CONSTITUENTS</b>							
<b>Constituent</b>	<b>Violation</b>	<b>Range</b>	<b>Unit</b>	<b>MCL or MCLG</b>	<b>PHG</b>	<b>Source</b>	<b>Health Effects Language</b>
1. Arsenic (*)	No	ND-24.0	ppb	10	NA	Erosion of natural deposits runoff from orchards, glass and electronic production waste.	Some people who drink water containing arsenic in excess of the MCL for many years may experience skin damage or circulatory system problems, and may have an increased risk of cancer.
2. Iron	No	<100-2200	ppb	.300	NA	Leaching and natural erosion.	NA

(\*) Granular ferric hydroxide arsenic removal treatment facilities are in operation at Well DSL (SS#3) and Wells 24/25 in the South Range area. See Table 3 for arsenic concentration results.

**TABLE 2**  
**NAWS-CHINA LAKE**  
**2012 MICROBIOLOGICAL TEST RESULTS**

<b>Microbiological Constituent</b>	<b>MCL</b>	<b>PHG</b>	<b>North Range Sites</b>	<b>South Range Sites</b>	<b>Typical Source(s)</b>
<b>Total Coliform Bacteria</b>	<b>2 or 5%</b>	<b>0</b>	<b>1 Present</b>	<b>0 Present</b>	<b>Natural in Environment</b>

Coliform bacteria monitoring in the NAWS-China Lake water distribution system is required on a monthly basis at 14 locations, although NAWS-China Lake staff sample up to approximately 30 locations per month to assure a safe drinking water system. During the entire 2012 sampling program, there were one positive coliform bacteria result within the water system and when that particular sampling site was re-sampled, the results came back "absent" of coliform bacteria. This indicates either a sampling error or laboratory contamination was likely during the initial sampling.

**ARSENIC RULE INFORMATION**

As required by the State-Department of Health Services, all arsenic concentrations over ½ the new MCL should be reported in table form. Table 3 shows arsenic concentrations at each production well and treatment facility. All results of 5 ppb or greater (MCL=10 ppb) are shown in **BOLD** lettering. Results for “raw” water are samples of groundwater collected at the wellhead and results for “treated” samples were collected after ferric hydroxide treatment.

**TABLE 3**  
**NAWS-CHINA LAKE**  
**2004-2012 ARSENIC RULE RESULTS**

Sampling Source	Sample Date	Wellfield	Area Served	Results	MCL
Well 15A (Raw)	20 Sep. 2004	Harvey	North Range	ND	10 ppb
	27 Dec. 2006	Harvey	North Range	2.2 ppb	10 ppb
	19 May 2009	Harvey	North Range	ND	10 ppb
	21 Dec 2011	Harvey	North Range	ND	10 ppb
Well 27 (Raw)	20 Sep. 2004	Harvey	North Range	2.2 ppb	10 ppb
	27 Dec. 2006	Harvey	North Range	2.4 ppb	10 ppb
	19 May 2009	Harvey	North Range	ND	10 ppb
	22 Dec. 2011	Harvey	North Range	2.7 ppb	10 ppb
	09 May 2012	Harvey	North Range	2.7 ppb	10 ppb
Well 30 (Raw)	20 Sep. 2004	Harvey	North Range	3.2 ppb	10 ppb
	27 Dec. 2006	Harvey	North Range	3.5 ppb	10 ppb
	19 May 2009	Harvey	North Range	ND	10 ppb
	22 Dec. 2011	Harvey	North Range	3.1	10 ppb
	09 May 2012	Harvey	North Range	4.6 ppb	10 ppb
Well 31 (Raw)	20 Sep. 2004	Harvey	North Range	2.5 ppb	10 ppb
	27 Dec. 2006	Harvey	North Range	3.1 ppb	10 ppb
	19 May 2009	Harvey	North Range	2.5 ppb	10 ppb
	21 Dec. 2011	Harvey	North Range	2.8 ppb	10 ppb
	09 May 2012	Harvey	North Range	3.6 ppb	10 ppb
Well 18C (Raw)	20 Sep. 2004	Intermediate	North Range	<b>11.0 ppb</b>	10 ppb
	17 Apr. 2007	Intermediate	North Range	<b>5.7 ppb</b>	10 ppb
	19 May 2009	Intermediate	North Range	<b>9.6 ppb</b>	10 ppb
	21 Dec. 2011	Intermediate	North Range	<b>14 ppb</b>	10 ppb
	09 May 2012	Intermediate	North Range	<b>15.0 ppb</b>	10 ppb

**TABLE 3 (Cont.)**

**NAWS-CHINA LAKE  
2004-2012 ARSENIC RULE RESULTS**

Sampling Source	Sample Date	Wellfield	Area Served	Results	MCL
Well 28 (Raw)	20 Sep. 2004	Intermediate	North Range	<b>6.9 ppb</b>	10 ppb
	17 Apr. 2007	Intermediate	North Range	<b>8.3 ppb</b>	10 ppb
	16 Dec. 2009	Intermediate	North Range	<b>8.3 ppb</b>	10 ppb
	20 Dec. 2011	Intermediate	North Range	<b>6.3 ppb</b>	10 ppb
	09 May 2012	Intermediate	North Range	<b>7.2 ppb</b>	10 ppb
Well Baker Tower (Raw)	23 Aug. 2012	Remote	North Range	<2.0 ppb	10 ppb
Sea Site #1 (Raw)	16 Dec. 2004	Pilot Knob Valley	South Range	ND	10 ppb
	26 Dec .2006	Pilot Knob Valley	South Range	<b>12.0 ppb</b>	10 ppb
	16 Dec. 2009	Pilot Knob Valley	South Range	<b>11.0 ppb</b>	10 ppb
	21 Dec. 2011	Pilot Knob Valley	South Range	<b>10 ppb</b>	10 ppb
	09 May 2012	Pilot Knob Valley	South Range	<b>10.0 ppb</b>	10 ppb
	28 Jun. 2012	Pilot Knob Valley	South Range	<b>7.5 ppb</b>	10 ppb
	22 Aug. 2012	Pilot Knob Valley	South Range	<b>9.0 ppb</b>	<b>10 ppb</b>
Well 25A (Raw)	16 Dec. 2005	Pilot Knob Valley	South Range	<b>41.0 ppb</b>	10 ppb
	26 Dec. 2006	Pilot Knob Valley	South Range	<b>32.0 ppb</b>	10 ppb
	20 May 2009	Pilot Knob Valley	South Range	<b>22.0 ppb</b>	10 ppb
	30 Jun. 2010	Pilot Knob Valley	South Range	<b>28.0 ppb</b>	10 ppb
	21 Dec. 2011	Pilot Knob Valley	South Range	<b>29.0 ppb</b>	10 ppb
Well 24 (Raw)	30 Jun. 2010	Pilot Knob Valley	South Range	<b>18.0 ppb</b>	10 ppb
	06 Dec. 2010	Pilot Knob Valley	South Range	<b>19.0 ppb</b>	10 ppb
	14 Dec. 2010	Pilot Knob Valley	South Range	<b>18.0 ppb</b>	10 ppb
	20 Dec. 2010	Pilot Knob Valley	South Range	<b>21.0 ppb</b>	10 ppb
	29 Dec. 2010	Pilot Knob Valley	South Range	<b>20.0 ppb</b>	10 ppb
	20 Dec. 2011	Pilot Knob Valley	South Range	<b>19.0 ppb</b>	10 ppb
	04 Jan. 2012	Pilot Knob Valley	South Range	<b>23.0 ppb</b>	10 ppb
	09 Feb. 2012	Pilot Knob Valley	South Range	<b>22.0 ppb</b>	10 ppb
	06 Mar. 2012	Pilot Knob Valley	South Range	<b>22.0 ppb</b>	10 ppb
	05 Apr. 2012	Pilot Knob Valley	South Range	<b>22.0 ppb</b>	10 ppb
	03 May 2012	Pilot Knob Valley	South Range	<b>24.0 ppb</b>	10 ppb

**TABLE 3 (Cont.)**

**NAWS-CHINA LAKE  
2004-2012 ARSENIC RULE RESULTS**

Sampling Source	Sample Date	Wellfield	Area Served	Results	MCL
Well 24 (Raw)	05 Jun. 2012	Pilot Knob Valley	South Range	<b>25.0 ppb</b>	10 ppb
	03 Jul. 2012	Pilot Knob Valley	South Range	<b>24.0 ppb</b>	10 ppb
	02 Aug. 2012	Pilot Knob Valley	South Range	<b>23.0 ppb</b>	10 ppb
	06 Sep. 2012	Pilot Knob Valley	South Range	<b>24.0 ppb</b>	10 ppb
	04 Oct. 2012	Pilot Knob Valley	South Range	<b>22.5 ppb</b>	10 ppb
	05 Dec. 2012	Pilot Knob Valley	South Range	<b>23.0 ppb</b>	10 ppb
Sea Site #3 (Raw)	02 Feb. 2005	Pilot Knob Valley	South Range	<b>16.0 ppb</b>	10 ppb
	26 Dec. 2006	Pilot Knob valley	South Range	<b>9.8 ppb</b>	10 ppb
	20 May 2009	Pilot Knob Valley	South Range	<b>12.0 ppb</b>	10 ppb
	20 Jun. 2010	Pilot Knob Valley	South Range	<b>11.0 ppb</b>	10 ppb
	06 Dec. 2010	Pilot Knob Valley	South Range	<b>16.0 ppb</b>	10 ppb
	14 Dec. 2010	Pilot Knob Valley	South Range	<b>14.0 ppb</b>	10 ppb
	20 Dec. 2010	Pilot Knob Valley	South Range	<b>17.0 ppb</b>	10 ppb
	29 Dec. 2010	Pilot Knob Valley	South Range	<b>17.0 ppb</b>	10 ppb
	20 Dec. 2011	Pilot Knob Valley	South Range	<b>14.0 ppb</b>	10 ppb
	04 Jan. 2012	Pilot Knob Valley	South Range	<b>20.0 ppb</b>	10 ppb
	09 Feb. 2012	Pilot Knob Valley	South Range	<b>16.0 ppb</b>	10 ppb
	06 Mar. 2012	Pilot Knob Valley	South Range	<b>16.0 ppb</b>	10 ppb
	05 Apr. 2012	Pilot Knob Valley	South Range	<b>18.0 ppb</b>	10 ppb
	03 May 2012	Pilot Knob Valley	South Range	<b>16.0 ppb</b>	10 ppb
	05 Jun. 2012	Pilot Knob Valley	South Range	<b>19.0 ppb</b>	10 ppb
	03 Jul. 2012	Pilot Knob Valley	South Range	<b>16.0 ppb</b>	10 ppb
	02 Aug. 2012	Pilot Knob Valley	South Range	<b>20.0 ppb</b>	10 ppb
	06 Sep. 2012	Pilot Knob Valley	South Range	<b>22.0 ppb</b>	10 ppb
04 Oct. 2012	Pilot Knob Valley	South Range	<b>16.5 ppb</b>	10 ppb	
05 Dec. 2012	Pilot Knob Valley	South Range	<b>18.0 ppb</b>	10 ppb	
Superior Valley (Raw)	02 Feb. 2005	Superior Valley	South Range	<b>8.0 ppb</b>	10 ppb
	26 Dec. 2006	Superior Valley	South Range	<b>9.7 ppb</b>	10 ppb
	20 May 2009	Superior Valley	South Range	<b>5.5 ppb</b>	10 ppb
	20 Dec. 2011	Superior Valley	South Range	<b>8.6 ppb</b>	10 ppb

**TABLE 3 (Cont.)**

**NAWS-CHINA LAKE  
2004-2012 ARSENIC RULE RESULTS**

Sampling Source	Sample Date	Wellfield	Area Served	Results	MCL
South Range Arsenic Treatment Facilities					
Well 25 (Treated)	03 Mar. 2007	Pilot Knob Valley	South Range	2.0 ppb	10 ppb
	08 Oct. 2009	Pilot Knob Valley	South Range	1.7 ppb	10 ppb
Well 24 (Treated)	06 Dec. 2010	Pilot Knob Valley	South Range	4.0 ppb	10 ppb
	14 Dec. 2010	Pilot Knob Valley	South Range	4.6 ppb	10 ppb
	20 Dec. 2010	Pilot Knob Valley	South Range	4.6 ppb	10 ppb
	29 Dec. 2010	Pilot Knob Valley	South Range	4.9 ppb	10 ppb
	04 Jan. 2011	Pilot Knob Valley	South Range	<b>5.4 ppb</b>	10 ppb
	01 Feb. 2011	Pilot Knob Valley	South Range	<b>5.3 ppb</b>	10 ppb
	03 Mar. 2011	Pilot Knob Valley	South Range	<b>6.6 ppb</b>	10 ppb
	07 Apr. 2011	Pilot Knob Valley	South Range	2.5 ppb	10 ppb
	05 May 2011	Pilot Knob Valley	South Range	4.5 ppb	10 ppb
	01 Jun. 2011	Pilot Knob Valley	South Range	2.8 ppb	10 ppb
	06 Jul. 2011	Pilot Knob Valley	South Range	3.6 ppb	10 ppb
	03 Aug. 2011	Pilot Knob Valley	South Range	4.5 ppb	10 ppb
	01 Sep. 2011	Pilot Knob Valley	South Range	3.8 ppb	10 ppb
	05 Oct. 2011	Pilot Knob Valley	South Range	3.1 ppb	10 ppb
	03 Nov. 2011	Pilot Knob Valley	South Range	3.9 ppb	10 ppb
	08 Dec. 2011	Pilot Knob Valley	South Range	<b>5.6 ppb</b>	10 ppb
	04 Jan. 2012	Pilot Knob Valley	South Range	2.9 ppb	10 ppb
	09 Feb. 2012	Pilot Knob Valley	South Range	4.7 ppb	10 ppb
	06 Mar. 2012	Pilot Knob Valley	South Range	4.5 ppb	10 ppb
	05 Apr. 2012	Pilot Knob Valley	South Range	3.3 ppb	10 ppb
	03 May 2012	Pilot Knob Valley	South Range	4.7 ppb	10 ppb
05 Jun. 2012	Pilot Knob Valley	South Range	<b>5.3 ppb</b>	10 ppb	
03 Jul. 2012	Pilot Knob Valley	South Range	3.9 ppb	10 ppb	
02 Aug. 2012	Pilot Knob Valley	South Range	4.5 ppb	10 ppb	
06 Sep. 2012	Pilot Knob Valley	South Range	<b>12.0 ppb</b>	10 ppb	
04 Oct. 2012	Pilot Knob Valley	South Range	2.7 ppb	10 ppb	
01 Nov. 2012	Pilot Knob Valley	South Range	3.3 ppb	10 ppb	
05 Dec. 2012	Pilot Knob Valley	South Range	4.2 ppb	10 ppb	

**TABLE 3 (Cont.)**  
**NAWS-CHINA LAKE**  
**2004-2012 ARSENIC RULE RESULTS**

Sampling Source	Sample Date	Wellfield	Area Served	Results	MCL
Well SS#3 (Treated)	06 Mar. 2007	Pilot Knob Valley	South Range	1.5 ppb	10 ppb
	08 Oct. 2009	Pilot Knob Valley	South Range	3.0 ppb	10 ppb
	06 Dec. 2010	Pilot Knob Valley	South Range	4.3 ppb	10 ppb
	14 Dec. 2010	Pilot Knob Valley	South Range	4.8 ppb	10 ppb
	20 Dec. 2010	Pilot Knob Valley	South Range	<b>5.1 ppb</b>	10 ppb
	29 Dec. 2010	Pilot Knob Valley	South Range	4.1 ppb	10 ppb
	04 Jan. 2011	Pilot Knob Valley	South Range	4.7 ppb	10 ppb
	01 Feb. 2011	Pilot Knob Valley	South Range	<b>8.2 ppb</b>	10 ppb
	03 Mar. 2011	Pilot Knob Valley	South Range	<b>5.0 ppb</b>	10 ppb
	07 Apr. 2011	Pilot Knob Valley	South Range	4.5 ppb	10 ppb
	05 May 2011	Pilot Knob Valley	South Range	<b>6.2 ppb</b>	10 ppb
	01 Jun. 2011	Pilot Knob Valley	South Range	<b>6.2 ppb</b>	10 ppb
	06 Jul. 2011	Pilot Knob Valley	South Range	<b>5.6 ppb</b>	10 ppb
	03 Aug. 2011	Pilot Knob Valley	South Range	<b>6.1 ppb</b>	10 ppb
	01 Sep. 2011	Pilot Knob Valley	South Range	<b>7.3 ppb</b>	10 ppb
	05 Oct. 2011	Pilot Knob Valley	South Range	<b>5.3 ppb</b>	10 ppb
	03 Nov. 2011	Pilot Knob Valley	South Range	<b>6.1 ppb</b>	10 ppb
	08 Dec. 2011	Pilot Knob Valley	South Range	<b>9.0 ppb</b>	10 ppb
	08 Jan. 2012	Pilot Knob Valley	South Range	<b>6.0 ppb</b>	10 ppb
	09 Feb. 2012	Pilot Knob Valley	South Range	<b>7.3 ppb</b>	10 ppb
	06 Mar. 2012	Pilot Knob Valley	South Range	<b>5.4 ppb</b>	10 ppb
	05 Apr. 2012	Pilot Knob Valley	South Range	<b>8.4 ppb</b>	10 ppb
	03 May 2012	Pilot Knob Valley	South Range	<b>9.5 ppb</b>	10 ppb
	05 June 2012	Pilot Knob Valley	South Range	<b>10.0 ppb</b>	10 ppb
	03 July 2012	Pilot Knob Valley	South Range	<b>11.0 ppb</b>	10 ppb
	02 Aug. 2012	Pilot Knob Valley	South Range	<b>10.0 ppb</b>	10 ppb
	<b>Treatment Media (Ferric Hydroxide) Replaced at Sea Site 3</b>				
	06 Sep. 2012	Pilot Knob Valley	South Range	2.6 ppb	10 ppb
	04 Oct. 2012	Pilot Knob Valley	South Range	<2.0 ppb	10 ppb
	01 Nov. 2012	Pilot Knob Valley	South Range	<2.0 ppb	10 ppb
	05 Dec. 2012	Pilot Knob Valley	South Range	<2.0 ppb	10 ppb

**TABLE 4****2012 MISCELLANEOUS WATER SYSTEM SAMPLING**

Constituents	Violation	Range	Unit
<b>TTHMs</b>			
Bromodichloromethane	No	<0.50-4.6	ppb
Bromoform	No	<0.50-9.9	ppb
Chloroform (Trichloromethane)	No	<0.50-1.50	ppb
Dibromochloromethane	No	<0.50-10.0	ppb
Total Trihalomethane (THMs/TTHM)	No	<2.0-26	ppb

**2012 MISCELLANEOUS WATER SYSTEM SAMPLING**

Constituents	Violation	Range	Unit
<b>Haloacetic Acids</b>			
Monochloroacetic Acid	No	<1.0-<1.0	ppb
Dichloroacetic Acid	No	<1.0-1.7	ppb
Trichloroacetic Acid	No	<1.0-<1.0	ppb
Monobromoacetic Acid	No	<1.0-<1.0	ppb
Dibromoacetic Acid	No	<1.0-3.9	ppb
Methyl t-butyl ether (MTBE) (All Wells sampled)	No	<.50-<3.0	ppb
Nitrates	No	<0.44-22.0	ppm
Asbestos	No	<2.0-<2.0	MFL

**TABLE 5**  
**2012 GENERAL WATER CHEMISTRY RESULTS**

<b>Source</b>	<b>Tot. Hard.</b>	<b>Calcium</b>	<b>Magnesium</b>	<b>Sodium</b>	<b>Potassium</b>	<b>Tot. Alkal.</b>	<b>Hydroxide</b>	<b>Carbonate</b>	<b>Bicarbonate</b>	<b>Sulfate</b>	<b>Chloride</b>	<b>Nitrate</b>	<b>Fluoride</b>	<b>pH</b>	<b>Spec Cond.</b>	<b>TDS</b>
<b>Mainsite</b>																
Well 15	110	36	5.5	61	2.4	79	<2	<2	96	120	41	5.9	0.60	7.8	550	370
Well 27	130	40	6.3	58	2.5	81	<2	<2	99	93	52	6.2	0.63	7.8	530	340
Well 30	78	27	2.4	42	2.1	70	<2	<2	86	48	29	6.9	0.75	7.8	350	220
Well 31	62	24	0.40	42	2	64	<2	<2	78	41	27	9.2	0.48	7.7	330	210
Well 18	5.5	1.8	0.22	62	<1	92	<2	4.7	110	13	20	<2	0.94	8.8	290	200
Well 28	37	10	3.0	46	3.4	92	<2	<2	110	18	16	<2	0.67	8.4	290	180
<b>Remote</b>																
Well LB	270	48	37	160	15	330	<2	<2	400	140	110	<2	0.75	7.6	1200	740
Well Baker Tower	190	37	25	92	11	270	<1.4	<2.5	320	63	63	<0.44	1.2	7.85	802	500
<b>South Range</b>																
Well 25	72	23	3.4	120	6.5	220	<2	<2	270	47	40	12	0.59	7.9	680	450
Well SS#1	120	42	3.5	310	8.2	430	<2	<2	520	120	160	21	0.91	7.2	1600	990
Well SS#3	110	35	5.4	84	8.1	130	<2	<2	160	58	76	19	0.41	7.8	670	430
Well SV	110	31	7.7	36	6.1	74	<2	<2	90	48	36	21	0.30	7.3	410	290
Well 24	110	35	5.0	70	6.1	140	<2	<2	170	40	42	22	0.45	7.7	550	370

**TABLE 6**  
**TOTAL GROUNDWATER PRODUCTION AT NAWS-CHINA LAKE**  
**FY2007-FY2011**

Help continue to conserve our groundwater resources!!!

**Groundwater Production at NAWS-China Lake**



