



Annual Water Consumer Confidence Report

**Hill Drinking Water System on
Joint Base McGuire-Dix-Lakehurst
Public Water System ID No. 1511010**

**Monitoring Period:
January 1, 2011 – December 31, 2011**

Is my water safe?

Yes. Last year, as in years past, the tap water in the Hill water system on Lakehurst met all U.S. Environmental Protection Agency (EPA) and NJ state drinking water health standards. Members of the 87th Air Base Wing Medical and Mission Support Groups vigilantly safeguard water supplies and once again we are proud to report that our system has not violated any maximum contaminant levels (MCL)s of primary water quality standards. This report is being distributed to you, the consumer, to provide you with information to allow you to make personal health-based decisions regarding drinking water consumption. The report will provide you with definitions so you understand the material presented. Additionally, this report will provide you with the sampling data for the water system and discuss the health concerns for each contaminant detected in the system. If you have any questions concerning data presented in this report please call Bob Previte, Environmental Engineer, at (732) 323-7800. The water system does not have regularly scheduled public meetings. Additional information concerning water consumption anywhere in the United States can be obtained by calling the Safe Drinking Water Hotline, toll free at (800) 426-4791.

Where does my water come from?

The Hill Water System obtains ground water from five wells. Four of the wells are screened in the Cohansey Aquifer and one deeper well is screened in the Potomac-Raritan-Magothy Aquifer. The wells range in depth from 50 feet to 990 feet. Total pumping capacity of the wells is approximately 560 gallons per minute. Water is treated using lime and soda ash to adjust pH, chlorine for disinfection and a Greensand filter for iron removal. The system stores 400,000 gallons of water for use at the station in two water towers. The Hill system serves the area from Route 547 to Westfield Hangar, excluding the Cathedral of the Air, Freedom Park and Building 42.

Source Water Assessments

The New Jersey Department of Environmental Protection (NJDEP) has prepared Source Water Assessment Reports and Summaries for all public water systems. Further information on the Source

Water Assessment Program can be obtained by logging onto NJDEP's source water assessment web site at www.state.nj.us/dep/swap or by contacting NJDEP's Bureau of Safe Drinking Water at (609) 292-5550. You may also contact this public water system at (732) 323-7800.

Source Water Assessment Summary

The results of the source water assessment performed on our five sources (all groundwater wells) are presented in the following table. The table illustrates the susceptibility ratings for the seven contaminant categories (and radon) for each well in the system. The table provides the rating for each well: high, medium and low for each contaminant category. The Hill system does not have any sources that are classified as ground water under the direct influence of surface water (GUDI) or surface water and it does not purchase water from other public water systems. The seven contaminant categories are defined below the table.

	Pathogens	Nutrients	Pesticides	Volatile Organic Compounds	Inorganics	Radionuclides	Radon	Disinfection By-Product Precursors
Well 5	Low	High	Medium	High	High	High	Medium	Medium
Well 9A	Low	High	Low	High	High	High	Medium	Medium
Well 37	Low	High	Medium	High	High	High	Medium	Medium
Well 43	Low	High	Low	High	High	Medium	Medium	Medium
Well 44	Low	High	Low	High	High	High	Medium	Medium

Please note that Well 43 is no longer in use. The Well was replaced by Well 48 in 2004. A source Water Assessment for Well 48 has not yet been completed.

Pathogens: Disease causing organisms such as bacteria and viruses. Common sources are animal and human fecal wastes.

Nutrients: Compounds, minerals and elements that aid growth, that are both naturally occurring and man-made. Examples include nitrogen and phosphorous.

Volatile Organic Compounds: Man-made chemicals used as solvents, degreasers and gasoline components. Examples include benzene, methyl tertiary butyl ether (MTBE) and vinyl chloride.

Pesticides: Man-made chemicals used to control pests, weeds and fungus. Common sources include land application and manufacturing of pesticides. Examples include herbicides such as atrazine and insecticides such as chlordane.

Inorganics: Mineral based compounds that are both naturally occurring and man-made. Examples include arsenic, asbestos, copper, lead and nitrate.

Radionuclides: Radioactive substances are both naturally occurring and man-made. Examples include radium and uranium.

Radon: Colorless, odorless, cancer causing gas that occurs naturally in the environment.

Disinfection Byproduct Precursors (DBPs): A common source is naturally occurring organic matter in surface water. Disinfection by-products are formed when the disinfectant (usually chlorine) used to kill pathogens react with dissolved organic material (for example leaves) present in surface water.

If a system is rated highly susceptible for a contamination category, it does not mean a customer is or will be consuming contaminated water. The rating reflects the potential for contamination of source water, not the existence of contamination. Public water systems are required to monitor for regulated contaminants and to install treatment if any are detected at frequencies and concentrations above allowable levels.

NJDEP found the following potential contaminant sources within the source water assessment areas for our sources. All potential contaminant sources are on the base.

1. Solid and hazardous waste handling and transfer facilities.
2. Closed solid waste landfill.
3. Septic tanks.
4. Urban, commercial and industrial land use.
5. Distance of the wells to wetlands.
6. The Golf Course.
7. The population density of the station.
8. Density of known contaminated sites, and NJDEP permitted surface water discharges.

Sources of Drinking Water Contamination

Sources of drinking water (both tap water and bottled water) may 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, and can pick up substances resulting from the presence of animals or from human activity. Regulated substances 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, which can be naturally-occurring or 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 agriculture, urban storm water runoff, and residential uses;
- Organic chemical compounds, including synthetic and volatile organic compounds, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; and
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health. 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's (EPA) Safe Drinking Water Hotline (800-426-4791).

Do I need to take special precautions?

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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Additional Information for Lead

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. Joint Base McGuire-Dix-Lakehurst (JB MDL) 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 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Water Quality Data Table

The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

Table 1-Regulated Contaminants

ALL DETECTED CONTAMINANTS WERE BELOW THE MCL

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 risks of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

CONTAMINANT (units)	SOURCE	MCLG EPA GOAL	MCL HIGHEST LEVEL ALLOWED	RANGE DETECTED 2011 DATA MIN.-MAX.	HILL SYSTEM 2011 DATA AVERAGE OF RANGE DETECTED	DATE OF MOST RECENT MONITORING DONE IN COMPLIANCE WITH REGULATIONS
Radioactive Contaminants						
Gross Alpha Emitters (pCi/l)	Erosion of natural deposits	0	15	3.72-4.46	4.09	03/28/06
Radium-228 (pCi/l)	Erosion of natural deposits	0	5 (Combined Radium -226 and Radium-228)	<1.0-1.39	0.7775	3/28/06, 6/07/06, 8/14/06, 11/01/06
Volatile Organic Contaminants						
TTHMs (Total Trihalomethanes) (ppb)	By-product of drinking water disinfection	N/A	80		7	Running annual average of quarterly results
HAA5 (Five Haloacetic Acids) (ppb)	By-product of drinking water disinfection	N/A	60		12	Running annual average of quarterly results
Regulated disinfectants						
Chlorine (ppm)	Drinking water disinfection	4.0 (MRDLG)	4.0 (MRDL)		0.75	Annual average of monthly results
Inorganic Contaminants						
Lead (ppb)	Household Plumbing erosion of natural deposits	0	AL=15.0	0 SAMPLES OUT OF 10 ABOVE ACTION LEVEL	90 th Percentile = 2.0	07/07/09-07/15/09
Copper (ppm)	Household plumbing; erosion of natural deposits	1.3	AL=1.3	0 SAMPLES OUT OF 10 ABOVE ACTION LEVEL	90 th Percentile = 0.2	07/07/09-07/15/09
Nitrate (as Nitrogen) (ppm)	Fertilizer run-off; leaking sewers	10	10	<0.1-1.5	0.8	02/02/11

Table 2-Secondary and Unregulated Contaminants-No MCL Established

UNREGULATED CONTAMINANT	RECOMMENDED UPPER LIMIT	RANGE DETECTED	2011 HILL SYSTEM DATA	DATE OF MONITORING
Aluminum(ppb)	RUL=200	<1.0-20.0	10.0	03/04/09
Chloride(ppm)	RUL=250	3.0-4.0	3.5	03/04/09
Sodium (ppm)	RUL=50	4.0-5.0	4.5	03/04/09
Sulfate (ppm)	RUL=250	8.0	8.0	03/04/09
Zinc (ppm)	RUL=5	0.02-0.03	0.025	03/04/09

Special Considerations Regarding Children, Pregnant Women, Nursing Mothers, and Others:

Children may receive a slightly higher amount of a contaminant present in the water than do adults, on a body weight basis, because they may drink a greater amount of water per pound of body weight than do adults. For this reason, reproductive or developmental effects are used for calculating a drinking water standard if these effects occur at lower levels than other health effects or concerns. If there is insufficient toxicity information for a chemical (for example, lack of data on reproductive or developmental effects), an extra uncertainty factor may be incorporated into the calculation of the drinking water standard, thus making the standard more stringent, to account for additional uncertainties regarding these effects. In the cases of lead and nitrate, effects on infants and children are the health endpoints upon which the standards are based.

Nitrate: 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.

Lead: Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home plumbing. If you are concerned about elevated lead levels in your home water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline at (1-800-426-4791).

The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals and synthetic organic chemicals. The Hill system received a monitoring waiver for synthetic organic compounds.

Unit Descriptions	
Term	Definition
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
positive samples	positive samples/yr: The number of positive samples taken that year
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions	
Term	Definition
MCLG	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	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.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

How can I get Involved?

The Consumer Confidence Report was prepared by Joint Base Water Working Group members from the 87th Medical and Mission Support Groups and the JBMDL Housing Offices. We welcome your questions and comments about the water quality from the Lakehurst systems. Any questions regarding this report or the quality of Lakehurst tap water should be directed to the Public Affairs office at (609) 754-2104, Bioenvironmental Engineering at 754-9057 or Civil Engineering at (732) 323-7800. Copies of this report are available in the following locations: Base Library, Housing Offices, Warfighter and Family Readiness Center, Medical Group's Bioenvironmental Office and Civil Engineering Offices.

The public website for the JBMDL installation posted links to the reports here:

<http://www.jointbasemdl.af.mil/consumerconfidencereports.asp>